NOTES ON THE GENUS *CLERODENDRUM* (VERBENACEAE). VI

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CLERODENDRUM Burm.
Additional bibliography: Mold., Phytologia 57: 389--404. 1985.

CLERODENDRUM ACULEATUM (L.) Schlecht.
Additional bibliography: Mold., Phytologia 57: 391--404. 1985.

A specimen of this species in the Vienna herbarium is labeled "Hb. Jacq. Westindie. Aiton" and is remarkable for having its leaf-blades to 10 cm. long and 5 cm. wide. Probably it was taken from a cultivated plant.

The Peruvian specimens, cited below, also do not have any indication on their labels that they originated from cultivated material, but it seems probable that they were, but they, unlike the Vienna specimen, represent a short-internode, small-leaved form with abbreviated inflorescences. This small-leaved form of the species, described by Kuntze as var. *parvifolium*, does not seem to be sufficiently distinct to warrant varietal designation. It is perhaps an ecologic form of the typical form from which all the large spine-producing leaves have fallen off (perhaps due to drought) or even have not been produced, leaving only the normally axillary fascicles of small non-spine-forming ones. This small-leaved form is well typified by *Boldingh 60B & 1351B*, *Britton & Fishlock 1046*, *Britton & Shafer 897*, *Combs 356*, and *Nicholson s.n.* The *Hahn 1014*, *Ricksecker 164 & 205*, and *Sintenis 579* collections in some herbaria represent the small-leaved form, in other herbaria the large-leaved form -- or even show both leaf forms on the same herbarium sheet! *Boldingh s.n.* in the Utrecht herbarium greatly resembles *C. inerme* (L.) Gaertn. in leaf shape, but has the characteristic spines and calyx-lobes of *C. aculeatum*.

The pollen of *C. aculeatum* is described by Nair & Rehman (1962) as 3-zonicolpate, subprolate (53 x 46 mu), the colpi fairly wide in the middle, the ends slightly rounded, the margin wavy; the apocolpium diameter 25 mu; the exine 2.8 mu thick; the ectine almost as thick as the endine and granulate, the granules distantly placed, the intergranular area with a faint LO. This description is based on *Herb. Nat. Bot. Gard. 31020*, *slide 2628* from Andhra Pradesh, India.

On the following page are reproduced two photomicrographs of the pollen of this species as taken from *Proctor 11255* from Jamaica by courtesy of my very good friend and colleague of many years, Dr. William T. Stearn. Figure 1 is enlarged 2,000 times; Figure 2 is enlarged 14,000 times.

Common and vernacular names for *C. aculeatum* include the following: "amourette", "amourette de St. Cristoph", "boesie droifi", "boschopfie", "boton de oro", "botón de oro", "chuc chuc", "clavellina espinosa" [also applied in Cuba to *Ginoria spinosa* Griseb.], "coffee bush", "coffee fence", "coffee-fence", "corazón de paloma", "crab-prickle", "crab prickle", "descamisador", "escambron blanco", "escambrón blanco", "geatte jambes", "haggarbush", "haguebush", "haugebush", "haugenush", "madampolam", "pree-bree", "prickly myrtle", "prickly-myrtle", "prickly

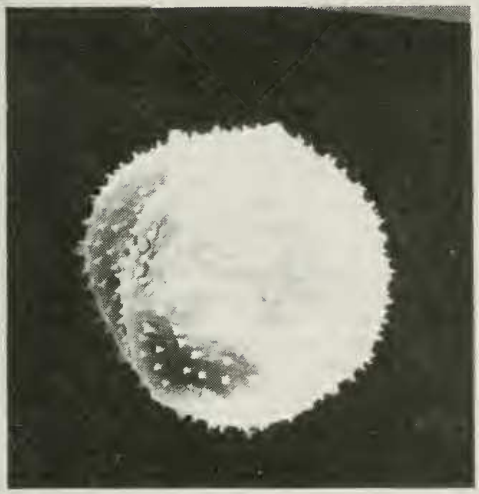

Fig.1

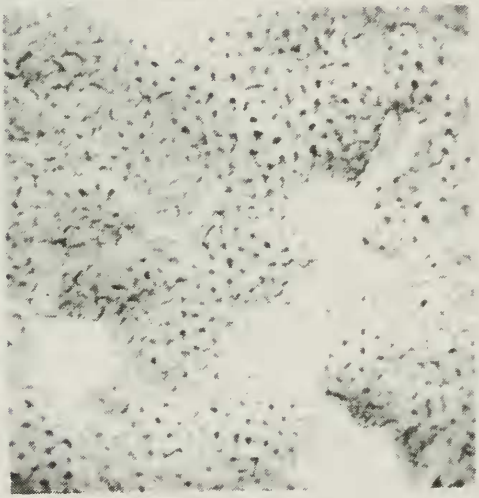

Fig.2

myrtle", "prickly volkameria", "prickly wild-coffee", "prickly wild coffee", "privet", "privet fence", "privet-wood", "privi-fence", "salunga", "salungá", "si me miras te enamoras", "small-leafed clerodendrum", "the bord de mer", "thé bord-de-mer", "thé bord de mer", "uña de gato", "volcameria", "volkaméria épineux", "volkamier à aiguillons", "wild coffee". "wild-coffee", and "zamourette".

Some errors and inaccuracies in the literature should be noted here. Huber & al. (1963) describe the corolla-tube as "about 1.5 mm long", obviously a typographic error for 1.5 cm.

The *Frutex sylvestris, flore albo, Amtralia moegri javanis* D. Kleinhof, cited by Burman (1968) as a synonym of *C. aculeatum*, actually belongs in the synonymy of *C. inerme* (L.) Gaertn.

The Hort. Cliff. of Linneus (1738) reference is sometimes cited to page "480" or "1737", the page reference should be 489 and the 1737 date is the title-page date which is incorrect as the work was not effectively published until 1738.

Rusby (1900) lists *C. aculeatum* from the "Falls of the Madeira, Brazil, Oct., 1886 (*no. 2572*)", but the collection he refers to actually is *C. rusbyi* Mold., a very closely related continental species.

López-Palacios (1977) cites the Baillon (1891) work as "1892", but pages 1 to 304 of volume 11 were actually issued in 1891. Urban (1911) and Knuth (1927) make the same mistake, using the 1892 titlepage date. The Houston (1798) illustration is mis-cited by Salisbury (1796) as "p. 6".

Burman (1768) erroneously equates *C. aculeatum* with *C. inerme* and so gives its natural distribution as "Habitat in utraque India".

Schauer (1851) cites for *C. aculeatum* a *Schomburgk 222* from Guyana, *Wydler 10* from St. Thomas, and *Sieber Fl. Mart. 159* from Martinique, but adds "In sepibus et fructicetis, in Brasilia circa Para leg. b. Sieber com. ab Hoffmansegg collector; ceterum frequens in Guiana et in insulis Antillanis et Caribaeis." I have seen only little material that is unquestionably *Clerodendrum aculeatum*. Schauer also mis-cites the illustration in Browne's work (1756) as "t. 20" instead of plate 30. Sweet (1826) and Graham (1839) also cite Browne's illustration as "tab. 20, fig. 2 (which depicts *Sapindus spinosus*). The Sloane (1725) work is sometimes cited as "Sloan. Hist." and "f. 23."

Jafri & Ghafoor (in mss.) cite the Grisebach reference of 1861 as "1864", while Parker (1918, 1924) cites "p. 398" instead of 402.

The Linnean Species Plantarum (1753) reference is cited by Burman (1768) as "Linn. Sp. 889"; he also mis-cites the Sloane (1696) reference as "f. 23" instead of fig. 2 & 3.

Material of *C. aculeatum* has been misidentified and distributed in some herbaria as *C. inerme* Gaertn., *C. molle* H.B.K., *Citharexylum* sp., and *Gmelina* sp. On the other hand, the *Adams 9441*, *Ekman H. 6723*, *Fuertes 239*, *Popenoe s.n.* [23 April 1968], *Proctor 23981*, *Rose, Fitch, & Russell 4033*, and *Tuckheim 2761* distributed as typical *C. aculeatum*, actually represent its var. *gracile* Griseb. & Mold., *Wilkes s.n.* [Cape of Good Hope] is *C. glabrum* E. Mey., and one of the *Krebs s.n.* in the Buitenzorg herbarium is *Anthacanthus spinosus* (Jacq.) Nees.

Citations: MEXICO: Veracruz: *Adole s.n.* [XII.1909] (Cb), *s.n.* [XI.1911] (Ed); *Herb. Pavon s.n.* (X); *Hioram s.n.* [Escambron near San Juan] (P); *Pavon s.n.* (X). BERMUDA ISLANDS: Ireland: *A. H. Moore 3024* (F--190030, G, Gg--155354, Mi, N). Main: *N. L. Britton 383* (Up--45687); *Brown & Britton 383* (A, D--511438, F--203894, G, N, W--524939); *O. Degener 1296* (N), *s.n.* [July 18, 1921] (Ms). BAHAMA ISLANDS: New Providence: *Nash & Taylor 1471* (N); *Northrop & Northrop 296* (B, C). CUBA: Camaguey: *Shafer 620* (B, B, Bi, Bi, Cp, F--284501, G, N, W--659226, W--659227), *2837* (F--251295, N, W--848957). Havana: *De la Ossa s.n.* [1825] (Dc); *León 710* (N); *Torralbas 351*(B). Las Villas: *Acuña 11383* (Es, Es); *Britton, Earle, & Wilson 5992* (N); *Britton & Wilson 5813* (N, W--658716); *Combs 356* (B, E--118959, F--358162, G, Io--17416, K, Ka--61329, N, W--1485828); *A. Gonzales* (N); *Jack 7530* (B, Ba), *8142* (A, N); *León 1388* (Ha, N); *León & Loustelot 9516* (Ha). Matanzas: *Wawra 90* (V). Oriente: *Acuña 11782* (Es, N); *N. L. Britton 1997* (N, W--847696); *Britton & Cowell 12717* (N); *Galeotti s.n.* (V); *León 12050* (W--1302129); *Shafer 7920* (N, Ut, W--696481); *C. Wright 127* (S), *3174* (B, E--118934, G, Os, S, T, W--57702, X), *s.n.* [Quernado, July 2] (G). Pinar del Río: *Acuña 15631* (Es), *18280* (Es); *Britton & Earle 7615* (B). CAYMAN ISLANDS: Grand Cayman: *N. Chevalier 252* (Ws); *Correll & Correll 50993* (N); *A. S. Hitchcock s.n.* [1-18-'91] (E--118965); *C. F. Millspaugh 1380* (F--61380). JAMAICA: *Aiton s.n.* [Herb. Jacq.] (V); *P. Browne s.n.* [Herb. Linneus 809/1] (It--photo of type, Ld--photo of type, Ls--type, N--photo of type); *Collector undetermined 308* (Ed); *Cuming 13* (V); *Gosse 13* (X); *W. Harris 5776* (B, F--145528), *9310* (B, N); *Harris & Britton 10792* (F--250618, N, W--848662); *W. Hooker s.n.* (P); *Kraus 225* (Ed); *March 1976* (K), *s.n.* (L, M); *McFadyen s.n.* (K); *Proctor 23981* (Ld), *32712* (Ld); *Purdie s.n.* [Nov. 1843] (K), *s.n.* (K); *Swartz s.n.* (S, S); *W. Wright s.n.* [1778] (S), *s.n.* (K); *Wullschlägel 422* (V). HISPANIOLA: Dominican Republic: *Canela L. s.n.* [17-VIII-1957] (W--2989528); *Czenuenka & Feucht 377* (N); *Ekman H.15345* (B, Ld, N, S, W--1555029); *Lavastre 2021* (N); *Mayerhoff s.n.* [1859] (B); *Poiteau s.n.* [St. Dom.] (B, Cb, P); *Wright, Parry, & Brummel 356* (W--57704), *494* (It, W--209799). Haiti: *Buch 342* (B); *E. C. Leonard 4139* (B, G, N, W--1076554); *Leonard & Leonard 11431* (N, W--1450388), *11795* (A, W--1450676), *13699* (E--992455, W--1452315). HISPANIOLAN OFFSHORE ISLANDS: Saona: *Marcano s.n.* [Herb. Jiménez 5296] (W--2534738). PUERTO RICO: *Britton, Britton, & Brown 6029* (N); *Britton & Wheeler 223* (N, W--847275); *Burch 3225* (N); *F. R. Fosberg 51324* (W--2591255A); *Gregory 284* (N); *A. A. Heller 6122* (A, B, Cb, D--500632, E--118961, Ed, Es, F--129313, G, It, Le, Ms--30955, N, W--426359); *Krug 896* (B); *Liogier, Liogier, & Matorell 29375* (N, N); *C. F. Millspaugh 663* (F--60663), *739* (F--60739), *752* (F--60752); *Otero 495* (Bt--49712, Du--292554, F--949940, Kr, N), *649* (N); *Otero & Chardon 787* (W--292915); *Plée 574* (P); *Quick s.n.* [9 March 1926] (Mi); *Read s.n.* (B); *H. N. Ridley s.n.* (Cb); *Sintenis 579* (B. Bm, Cb, Cb, Cb, E--118966. E--118967, G, K, L, Lu, Mu--1611, S, W--403468, W--1323360, X), *579b* (B, B, Bm, Le, Pa), *579c* (B, Le, P, Vu); *Stahl 882* (B, Bg), *882b* (B); *F. L. Stevens 4806* (J); *J. A. Stevenson 2241* (F--493096, W--1475544); *Underwood & Griggs 693* (N, W--405636);

Velez 928 (N); *Wadsworth s.n.* []ct. 1, 1966] (Ws); *R. J. Wagner 1109* (Ws). PUERTO RICAN OFFSHORE ISLANDS: Cabras: *Otero 93* (Mi, N). Culebra: *Burch 6403* (N); *C. F. Millspaugh 591* (F--60591). Mona: *Otero & Chardon 881* (W--2950454). Pineros: *E. L. Little 21684* (W--2673696). Vieques: *Brenning s.n.* [12.5.1904] (B); *Griggis & Brokx N-4-14* (N); *Shafer 2726* (Gg--31506, N, W--790247). VIRGIN ISLANDS: Anegada: *Britton & Fishlock 1046* (N, W--756786). Jost van Dyke: *E. L. Little 22015* (W--2705327). St. Croix: *Bond s.n.* [Sandy Point, 15 Apr. 1970] (N); *Britton & Cowell 1* (N); *Hewitt 417* (Mi); *P. Kaufman 3* (N, W--2716746); *Little & Woodbury 23719* (N, W--2690112); *Paulsen 283* (S); *Read s.n.* (B); *A. E. Ricksecker 205* (B, Ca--473246, E--118962, F--70541, G, N, Ob--14857, W--278095), *L. A. Ricksecker 164* (B, E--118960, F--878809); *Thompson 417* (Ba, Cb), *496* (Ba); *West s.n.* (L, L). St. John: *Holdridge 416* (N); *Moritz s.n.* [St. Thomas et St. Jan] (B). St. Thomas: *Børgesen 78b* (F--131541), *88b* (O1); *Britton & Marble 417* (N, W--756367), *1354* (N, W--756989); *Collector undetermined 17* (P, X); *Curran 785* (G, N, N); *Eggers 219* (Mu--1703, P), *320* (G, Pa), *666* (A), *s.n.* [16.III.1877] (Mu--3728), *s.n.* [Sept. 1881] (B), *s.n.* [1885] (Mi); *Ehrenberg 190* (B, B); *Herb. Ventenat s.n.* (Cb); *Holton s.n.* (T); *F. W. Johnson 1344* (N), *1376* (N); *Kuntze 142* (N, N), *554b* (N); *Ledru 185* [Herb. A. Juss. 5023] (P, P, P), *s.n.* [1798] (P, P), *s.n.* (Ed); *Marble 1480* (F--407717, K, N, W--757049); *Morrow 122* (W--1411263); *Paulsen 115b* (N); *Pease 22901* (G); *L. Petersen s.n,* (B); *Read s.n.* (B); *Riédlé s.n.* [W. Ind.] (P), *s.n.* (P); *Weddell s.n.* [1851] (P); *Wydler 10* (Cb, Cb, Cb, Dc, Dc). Tortola: *Britton & Shafer 897* (K, N, W--756689); *D'Arcy 4750* (W--2590282A); *Fishlock 184* (D--583127, G, K, W--1146690). Virgin Gorda: *Fishlock 250* (N); *E. L. Little 23775* (N, W--2690189). Water: *Eggers 219* [Herb. Prager 18684] (B, B, B, B, Br, Cb, Gg--32014, Gg--241567, Le, V, Vu, X). LEEWARD ISLANDS: Antigua: *Box 974* (Ca--939112, N, W--1713904); *Duss 11* (W--428825); *Gillis 8248* (W--2593636A); *Hanstein s.n.* [1863] (B); *Nicholson s.n.* (K); *Rose, Fitch, & Russell 3254* (B, N, W--639408); *A. C. Smith 10434* (Ld, N, S, W--2114810); *Wullschlägel 422* (Mu--770), *s.n.* [Antigua L*%)[(Br). Barbuda: *Gregory s.n.* (Bm); *Ponthieu s.n.* (Cb); *Stoddart 3010* (W--2887452). Désirade: *Collector undetermined s.n.* [Désirade] (P). Dominica: *Finlay s.n.* [June 1792] (K); *Hodge 866* (N); *Hoskin s.n.* [1841] (B); *Imray 159* (K), *s.n.* (G); *Lloyd 733* (N); *H. A. A. Nicholls 39* (B); *Nicolson 1888* (W--2468603); *Othmer s.n.* [23/10/03] (Mu--4057); *Ramage s.n.* [May 5, 1888] (B), *s.n.* [May 9, 1888] (Bm, K), *s.n.* [Feb. 27, 1889] (B, D); *Stern & Wasshausen 2424* (W--2566043); *G. L. Webster 13294* (W--2469017); *Wilbur, Dunn, Hespenheide, & Wiseman 8109* (Au--272318, Ld, Mi, W--2534492), *8261* (W--2534459). Guadeloupe: *Beaupertuis s.n.* [1839] (P, P); *Bertero s.n.* (Dc); *Collector undetermined s.n.* [Guadeloupe] (P); *Duchassaing s.n.* [1852] (B, P, P); *DuGage s.n.* [1838] (Du--166597); *Duss 292* (P), *2387* in part (B, L, N, W--849816); *Forsström s.n.* (Lu, S, S); *Funck & Schlim 31* (Bm, Cb, Lu, P); *Herb. Coll. Pharmacy s.n.* (Pa); *Isert s.n.* [1787] (Cp); *Krauss s.n.* [1818] (Dc); *L'Hérminier s.n.* (P, X); *Perrottet s.n.* [June 25, 1824] (Cb), *s.n.* [Juillet 2, 1824] (Cb, Dc), *s.n.* [1824] (P), *s.n.* [1825] (P); *Proctor 19897* (W--2777933); *Quentin 264* (P), *358* (P); *Stehlé 1399* (N); *Virlet d'Aoust 853* (P). Marie Galante: *Collector undetermined s.n.* [Ma-

rie Galante] (P). Montserrat: *Mell & Mell s.n.* [July 21, 1933] (W--1481579); *Proctor 18988* (W--2777934); *Shafer 68* (Cm, F--293733, N, W--695101), *644* (Cm, F--294256, N, W--695538). Nevis: *Roger P.12* (Bm). Saba: *Boldingh 1351b* [771] (Ut). St. Bartholomew: *Fahlberg 23* (Th); *Gotts s.n.* (S, Us, Us); *Hjerdstedt s.n.* (S); *Questel 130* (N). St. Eustache: *Boldingh 24b* [18] (Ut), *60b* [32] (Ut), *637b* [12.6.56] (Ut), *s.n.* [11 Apr.] (Le, Le), *s.n.* [8 Mei] (Le, Le), *s.n.* (Le, Ut); *Forsström 43* (S); *Groll-Meyer 95* (Ut); *Suringar s.n.* [8.V.1885] (B). St. Kitts: *Bailey & Bailey 133* (Ba); *J. S. Beard 288* (N); *Collector undetermined 22* (K), *s.n.* [St. Christophe] (K); *Eggers 219b* (B, B, V); *Forsström s.n.* (S); *Herb. Adanson s.n.* (P, P); *Herb. Mus. Bot. Lund. s.n.* [St. Christoph.] (Lu). St. Martin: *Boldingh 2547b* [1665] (Ut), *2792b* [1960] (Ut); *s.n.* [30 April] (Le); *Britton & Cowell 83* (B, K, N, W--419900); *Goodwin & Goodwin 2* (N). WINDWARD ISLANDS: Barbados: *L. M. Andrews 679* (N); *J. Ball s.n.* [30 March 1881] (C); *Eggers 7215* (B); *Findley s.n.* [7 March 1791] (Bm); *G. S. Miller 72* (W--1147602); *Ponthieu s.n.* (Us); *Potter 5472* (Ms); *Sauer 2200* (Ws), *2203* (Ws); *Trin. Bot. Gard. Herb. 2395* (R). Bequia: *Eggers 7031* (B); *Joseph B. 79* (G). Grenada: *Proctor 17130* (W--2777935). Grenadines: *R. A. Howard 11051* (N). Martinique: *Bélanger 185* (X), *744* (Cb, X), *935* (P); *Duss 1968* (B, N); *Egler 39-193* (N); *Fitzroy s.n.* [Mai 1823] (V); *Hahn 126* (B, B, Bm, Cb, Cb, G, K, L, P, P, V, V, W--57700. X), *1014* (P, P); *Kohaut s.n.* [Sieber Fl. Mart. 159](B, B, B, B, Br, E--118840, K, L, L, Le, Mu--769, V, V, X); *Larsen & Larsen 35624* (Ac); *Plée s.n.* (P); *Steinheil 117* (P, P). Mustigue: *Smith & Smith G.127* (Bm). St. Lucia: *P. Beard 1082* (S, W--1882220); *Crudy s.n.* (Mu--768); *Herb. Molliano s.n.* [1834] (Br); *Herb. Schreber s.n.* (Mu). St. Vincent: *Caley s.n.* [June 1877] (Bm); *Collector undetermined 16* (Ed), *44* (Ed); *Eggers 6692* (B); *D. Fairchild s.n.* [Feb. 4, 1932] (N, W--1556968); *Guilding 44* (Bm), *s.n.* (K); *C. V. Morton 4818* (W--1883980), *6039* (W--2229065); *Smith & Smith 936* (B, C); *Trin. Bot. Gard. Herb. 5846* (R). TRINIDAD & TOBAGO: Tobago: *W. E. Broadway 4691* (B, Bm, P, Us); *R. O. Williams Trin. Bot. Gard. Herb. 11152* (R), *11834* (R). Trinidad: *Wilder s.n.* [1910] (Bi). SWAN ISLANDS: Great Swan: *G. Nelson 63* (G), *68* (G); *Proctor 32509* (Ld). GUYANA: *Herb. Otterbein s.n.* (L); *W. Parker s.n.* [Demerara 1821] (Dc); *Rich. Schomburgk 757* (B, K, K). SURINAM: *Collector indig. 30* (Ut); *Soeprato 18d* (N, Ut); *Tulleken 312* (Le); *Wullschlägel 409* (Br, Gt, V, V). BRAZIL: Pernambuco: *Stübler s.n.* [1901] (Ol). SÉNÉGAL: *J. T. Baldwin Jr. 5743* (W--2070031); *Irvine 3122* (E--2002928). ZAIRE: *R. Germain 2057* (Br, Br, Br, N); *Vanderyst 20485* (Br, Br), *28131* (Br). PAKISTAN: Northwestern States: *Royle s.n.* [N. W. India] (L). INDIA: East Punjab: *J. R. Drummond 23639* (K), *26298* (Ca--244961); *Herb. Fischer s.n.* [Spont. Ind. or.] (L). Gujarat: *Herb. Blatter 35965* (Xa). Uttar Pradesh: *Marcovicz s.n.* [Kanoni, 22.XII.1927] (L). State undetermined: *Collector undetermined s.n.* [India orient.] (Cp); *Kamphövener 1128* (Cp). AUSTRALIA: Queensland: *Meebold 3832* (Mu). CULTIVATED: Bahamas: *Rothrock 393* (D, Up--33324), *514* (F--244796); *N. Taylor 468* (J). Bermuda: *Lefroy 150* (K). Cape Verde Islands: *Brunner s.n.* [1841] (E--118692, M, V), *s.n.* [cult. in S. Louis] (Cb). Cuba: *Roig & Cremata s.n.* [Herb. Roig 2156] (Es). Egypt: *Mahdi s.n.* [21/9/1963] (Gz, Gz, Gz, Gz, Gz). England: *Herb. Hort. Chelsea 3250* (Bm); *Herb. Hort. Kew s.n.*(B).

Florida: *Avery 792* (N), *1280* (Ld). France: *Dumas s.n.* [Hort. Paris] (K); *Herb. Fauché s.n.* [Mignot] (X); *Herb. Hort. Bot. Monsp. s.n.* [Jul. 1822] (K); *Herb. Hort. Bot. Paris s.n.* [13 Aug. 1781] (V), *s.n.* [J. du Roi] (Cb, Cb). Germany: *Herb. Buek 1786*(B); *Herb. Hort. Bltner 7198* (B); *Herb. Hort. Erf. s.n.* [Jamaica] (B); *Herb. Link s.n.* (B). Guyana: *Herb. Brit. Guiana Bot. Gard. s.n.* [1889] (K, U); *Jenman 1556* (K, P, U). Hawaiian Islands: *Neal s.n.* [Nov. 14, 1953] (Bi); *Pearsall s.n.* [July 6, 1949] (Bi). India: *C. B. Clarke 23344* (Bm); *Herb. Blatter 15030* (Xa); *Herb. Hort. Bot. Calcutt. s.n.* (B, B, Dc, L); *Hooker f. & Thomson s.n.* (B, L, Le, V); *Kamphövener 547* (B); *Royle s.n.* [Herb. Mill.] (D); *T. Thomson 291* (K); *Voigt s.n.* [Ind. or.] (B); *Wallich s.n.* [Hort. Calc. 1832] (K), *s.n.* [Calcutta 1837] (Cb). Italy: *Herb. Moricand s.n.* [cult. Neapol.] (Cb). Netherlands: *Herb. Lugd.-Bat. 908265-975* (Le), *908266-303* (Le), *908266-306* (Le); *Herb. Persoon s.n.* (Le); *Herb. Royen s.n.* (Le, Le). Peru: *Pavon s.n.* (B, Cb, P). Puerto Rico: *R. A. Howard 16324* (Ba). Russia: *Herb. Hort. Pawl. s.n.* (Us). Sénégal: *Brunner 36* (K); *Chevalier s.n.* (K); *Leprieur s.n.* [1830] (V). Surinam: *Focke 1333* (Ut); *Miquel s.n.* (K). Tobago: *W. E. Broadway 4691* (Cb, Cb, Cb, E--718277, F--413645, G, Le, Le, N, S, Ut, W--759600). Trinidad: *W. E. Broadway s.n.* [Port-of-Spain, May 27, 1927] (I). Venezuela: *Lasser 4272* (Ve). Zaire: *Van deryst 28095* (Br). LOCALITY OF COLLECTION UNDETERMINED: *Collector undetermined s.n.* (Cp, Dr, S, T, Us, X); *Edgeworth 279* (Dc); *Eggers 100* (Le); *Euphrasén s.n.* [ex America boreali] (Th); *Gregory s.n.* [W. Ind.] (Bm); *Herb. Jacquin s. s.n.* (V); *Herb. LeMonnier s.n.* (Cb, Cb); *Herb. Liebmann s.n.* (Cp); *Herb. Portenschlag s.n.* (V); *Herb. Rottböll s.n.* (Cp, Cp); *Herb. Schreber s.n.* (Mu--771); *Herb. Schwägrichen s.n.* (Mu--1388); *Herb. Vahl s.n.* (Cp); *Krebs s.n.* [Ind. occid.] (Bz--18724, Bz--18725); *Mertens s.n.* (L); *Moll s.n.* [1834] (Br); *Ponthieu s.n.* (Bm); *Ravn s.n.* (S); *Ryan s.n.* (Cp); *Sessé, Mocino, Castillo, & Maldonado 2181* (Ld--photo, N--photo, Q); *Swartz 18* (Q). *s.n.* (L, S, S); *Vahl s.n.* (Cp); *Warming 204* (W--1234902); *West s.n.* (Cp, Dc). MOUNTED ILLUSTRATIONS: Krug, Icon. Pl. Portoric. pl. 95 (B).

CLERODENDRUM ACULEATUM var. *GRACILE* Griseb. & Mold. ex Mold., Alph. List Comm. Vern. Names 9 nom. nud. 1939; Carib. Forester 2: 13--14. 1940.

Synonymy: *Clerodendron gracile* Griseb. ex Mold., Prelim. Alph. List Inv. Names 20 in syn. 1940. *Clerodendrum aculeatum* var. *gracile* "Griseb. ex Mold." apud Alain in León & Alain, Fl. Cuba, imp. 1, 4: 320. 1957. *Clerodendron aculeatum* (L.) Griseb. var. *gracile* Griseb. & Mold. apud St. John, Nomencl. Pl. 22. 1958. *Clerodendrum aculeatum* (L.) Schlecht. var. *gracile* Griseb. & Mold. apud St. John, Nomencl. Pl. 22. 1958. *Clerodendrum aculeatum* var. *gracile* Wright ex Mold., Résumé 271 in syn. 1959. *Clerodendrum aculeatum* var. *gracile* Griseb. ex Mold., Phytologia 31: 396 in syn. 1975.

Bibliography: Mold., Geogr. Distrib. Avicenn. 5--7, 14, & 36. 1939; Mold., Alph. List Comm. Vern. Names 9. 1939; Mold., Carib. Forest. 2: 13--14. 1940; Mold., Prelim. Alph. List Inv. Names 20. 1940; Mold., Alph. List Inv. Names 17. 1942; Mold.,Known Geogr. Distrib. Verbenac., ed. 1, 16, 24--26, 71. & 89. 1942; Mold., Phytologia 2: 97. 1945; Mold., Alph. List Cit. 1: 5, 61, 64--66, 118, 156,

184--186, 188, 216, 218, 243, 258, 259, 300, 303, 311, & 314 (1946), 2: 338, 418, 422, 427, 437, 459, 569, 645, 647, & 652 (1948), 3: [653], 654, 663, 706, 707, 712, 720, 739, 748, 801, 833, 868, 871, 880, 889, & 929 (1949), and 4: 983, 1002, 1012, 1021, 1033, 1035, 1037, 1044, 1054, 1063, 1111, 1142, 1144, 1145, 1178, 1206, & 1303. 1949; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 29, 43, 46, 47, 158, & 180. 1949; Mold., Phytologia 4: 44. 1952; Alain in León & Alain, Fl. Cuba, imp. 1, 4: 319 & 320. 1957; St. John, Nomencl. Pl. 22. 1958; Mold., Résumé 35, 51, 54--56, 215, 264, 271, & 447. 1959; J. J. Jiménez, Cat. Fl. Doming. Supl. 1: 212. 1966; Mold., Fifth Summ. 1: 69, 95, 99, 100, 102, 357, 446, & 460 (1971) and 2: 861. 1971; C. D. Adams, Flow. Pl. Jamaic. 637. 1972; Alemán Frías, Aurich, Ezcurra Ferrer, Gutiérrez Vázquez, Horstmann, López Renduales, Rodríguez Graquitana, Roquel Casabella, & Schreiber, Kulturpfl. 19: 422. 1972; A. L. Mold., Phytologia 23: 318. 1972; Farnsworth, Pharmacog. Titles 8 (8): vi. 1973; Alain in León & Alain, Fl. Cuba, imp. 2, 2: 319 & 320. 1974; Mold., Phytologia 31: 396. 1975; Mold., Phytol. Mem. 2: 61, 88, 92, 93, 95, 348, 390, & 533. 1980; Raj, Rev. Palaeobot. Palyn. 39: 358 & 374. 1983.

This variety differs from the typical form of the species in having the mature leaf-blades permanently more or less pilose or pubescent over the whole lower surface. It is based on *Ferdinand Rugel 358* from the Yumuri Mountains in Matanzas, Cuba, collected in August of 1849 and deposited in the Rijksherbarium in Leiden. The type collection was distributed to some herbaria as "*Clerodendron aculeatum* var." and to some others as "*Clerodendron gracile* Griseb.! n. sp."

Collectors describe this plant as a straggling, diffusely slender-branched, arching shrub, 1--3 m. tall, sometimes subscandent, the branches spreading, pendent, or trailing, the leaved decussate-opposite or rarely ternate. often subopposite, the flowers quickly wilting, the corolla white or whitish, the filaments usually violet-blue or purple to crimson, rarely white, and the style purple, the stigma bifid.

They have found the plant growing mostly in seashore thickets, coastal hillsides, dry hillsides in general, along the borders of mangrove swamps, on coastal sand dunes, low areas by salt ponds, on rocky roadsides and along trails, in riverbeds, and on arid wooded plains, from sealevel to 265 m. altitude, in flower in January, June to August, October, and November, in fruit in July and August.

The extract from the boiled leaves is used locally as a cough remedy. A wood sample accompanies *Leonard 4139*.

Two rather distinct forms of this variety occur, one has very small leaves, the blades only 1--3 cm. long and 4--12 mm. wide, well illustrated by *Britton & Wilson 5813*, *Fuertes 239*, *Harris 5776*, *León 710*, *Leonard & Leonard 11795* & *13699*, *Rugel 358*, and *Wright 3174*. In its habit it reminds one of *Citharexylum microphyllum* (P. DC.) O. E. Schulz. The other form has large leaves, the blades 2--4.5 cm. long and 1--1.7 cm. wide, well illustrated by *Harris 9310*, *Harris & Britton 10792*, *Macfadyen s.n.*, *March 1976* & *s.n.*, *Millspaugh 1380*, *Purdie s.n.*, and *Roig & Cremata s.n.* [Herb. Roig 2156]. The forms are probably edaphic in origin. *Tuckheim 2761* is more or less intermediate, while *Leonard & Leonard 11431* exhibits both types of leaves on the

same branch.

It is worth noting that Adams (1972) speaks of the leaves of *C. aculeatum* being "puberulous or glabrous adaxially, puberulous abaxially.

Vernacular names reported for *C. aculeatum* var. *gracile* are "clavellina espinosa" [also applied to *Ginoria spinosa*] and "jasmin de costa".

Material of this variety has been misidentified and distributed in some herbaria as *Volkameria aculeata* L. and *Anthacanthus tetrastichus* C. Wright.

Citations: CUBA: Havana: *Boldo 14* (Q); *De la Ossa s.n.* [1822] (Dc); *Ekman 298* (B, S); *Moldenke & Moldenke 19859* (Es, F, Lg, Mg, Mr, N, No, Ot, Sm, Ss); *Morales & Bosque 268* (B). Las Villas: *C. V. Morton 10503* (W--2350976), *10509* (W--2350982); *Roig & Cremata 7368* (Es), *7919* (Es). Matanzas: *Rugel 358* (B--isotype, Bm--isotype, G--isotype, K--isotype, Ld--photo of type, Le--type, M--isotype, N--isotype, N--photo of type). Oriente: *Acuña & Diaz Barreto 17345* (Es), *17349* (Es); *Clémente 2648* (Ha, N), *4289* (Ha, W--1843816), *6083* (W--2284443); *Ekman 7794* (N, S), *8253* (S), *8899* (S, W--2113456); *León 11751* (Ha, W--2289300), *12050* (Ha), *12051* (Ha), *22787* (N); *López Figueiras 263* (W--2226838); *Morton & Alain 8839* (W--2284984). Pinar del Río: *Ekman 13024* (S). Province undetermined: *Galeotti s.n.* [Roches de San Lorenzo 1840] (Br, Cb); *Linden 43* (P); *Sagra s.n.* (P); *C. Wright 3174* [99; leg. 1805; Herb. Sauvalle 1778] (Bm, Hv, Hv, Pa). CAYMAN ISLANDS: Grand Cayman: *Kings G.C.133* (N), *148* (N); *Popenoe s. n.* [23 April 1968] (Ft--2921). JAMAICA: *C. D. Adams 9441* (Mu); *Cuming 13* (Bm); *W. Harris 5776* (Bm); *Harris & Britton 10792* (K); *Houston s.n.* [1730] (Bm); *Masson s.n.* [1782] (S); *Proctor 23981* (N); *Webster, Ellis, & Miller 8569* (S); *W. Wright s.n.* (Bm); *Yuncker 17220* (Mi, S). HISPANIOLA: Dominican Republic: *Ekman H.6723* (B, F--839502, Ld, S, W--1304676); *Fuertes 239* (B, Bm, Cb, Cb, E--706885, F--385196, G, K, L, Le, Lu, P, P, S, Ut, V, W--658477); *A. H. Liogier 20595* (N); *Liogier & Liogier 24857* (N); *Rose, Fitch, & Russell 4033* (N, W--760170); *Tuckheim 2761* (B, Bm, Br, Cb, Cb, E--118933, G, K, Le, Mu--4113, N, S, V, W--656137). Haiti: *E. C. Leonard 4139* (B, G, N, W--1076554); *Leonard & Leonard 11795* (A, W--1450676), *13699* (E--992455, K, K, W--1452315). HISPANIOLAN OFFSHORE ISLANDS: Tortue: *Leonard & Leonard 11431* (N, W--1450388). LOCALITY OF COLLECTION UNDETERMINED: *Collector undesignated s.n.* (Ed).

CLERODENDRUM ACULEATUM var. *GUYANENSE* Mold., List Geogr. Distrib. Avicenn. 22 nom. nud. 1939; Phytologia 1: 444. 1940.

Bibliography: Mold., List Geogr. Distrib. Avicenn. 22. 1939; Mold., Phytologia 1: 444. 1940; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 33 & 89. 1942; Mold., Alph. List Cit. 2: 640. 1948; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 68 & 180. 1949; Mold., Résumé 78 & 447. 1959; Mold., Fifth Summ. 1: 133 (1971) and 2: 861. 1971; Mold., Phytol. Mem. 2: 126 & 533. 1980.

This variety differs from the typical form of the species in its calyx-rim being only short-toothed, the teeth triangular-ovate, 0.7--1 mm. long, apically acute and not at all acuminate, caudate, or

spreading-reflexed.

The variety is based on *Leblond 282* from French Guiana, collected in 1792 and deposited in the herbarium of the Conservatoire et Jardin Botaniques at Geneva. Thus far it is known only from the original collection. It should be carefully compared with the specimens cited under the typical form of the species in the present work from Guyana as well as with the material cited below from Brazil under *C. rusbyi* Mold.

Citations: FRENCH GUIANA: *Leblond 282* (Cb--type, Ld--photo of type, N--isotype, N--photo of type).

CLERODENDRUM ADENOCALYX Dop in Lecomte, Fl. Gén. Indo-chine 4: 883 [as "*Clerodendron*"]. 1935; Mold., Known Geogr. Distrib. Verbenac, ed. 1, 59 & 89. 1942.

Synonymy: *Clerodendron adenocalyx* Dop in Lecomte, Fl. Gén. Indochine 4: 883. 1935.

Bibliography: Dop in Lecomte, Fl. Gén. Indo-chine 4: 853 & 883. 1935; A. W. Hill, Ind. Kew. Suppl. 9: 68. 1938; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 59 & 89 (1942) and ed. 2, 136 & 180. 1949; Mold., Résumé 175 & 447. 1959; Mold., Fifth Summ. 1: 299 (1971) and 2: 861. 1971; Mold., Phytol. Mem. 2: 289 & 533. 1980.

A shrub, to 4 m. tall; young branches puberulent; leaves opposite; petioles 3--5 mm. long, canaliculate above, pubescent; leaf-blades chartaceous, elliptic or elliptic-lanceolate, 8--10 cm. long, 2.5--4 cm. wide, apically acute, basally wedge-shaped, glabrous above. finely glandular-punctate beneath, the venation impressed above and prominent beneath; secondaries 8--10 per side, prominent beneath, anastomosing near the margins; tertiaries transverse, irregular; veinlet reticulation rather abundant; inflorescence paniculate, terminal, corymbiform, about 3 cm. long and wide, pubescent; bracts very small; flowers 3.5 cm. long; calyx conic, coriaceous, 7 mm. long, brown, externally pubescent, covered with numerous small glands within, the lobes oval, 2.5 mm. long, apically acute; corolla white, the tube capillary, 2.8 mm. long, the lobes equal, 2.5 mm. long and wide, rounded; stamens long-exserted; filaments glabrous; anthers opening by longitudinal slits; style equaling the stamens; ovary glabrous.

This species is based on an unnumbered Kerr collection from 1000 m. altitude at Palc-munung, Vien-chan, Laos. Nothing is known to me of this species except what is stated in the bibliography.

CLERODENDRUM ADENOPHYSUM H. Hallier, Meded. Rijks Herb. Leid. 37: 66. 1918.

Synonymy: *Clerodendron adenophysum* H. Hallier ex E. D. Merr., Bibl. Enum. Born. Pl. 515. 1921. *Clerodendron adenophysum* Wall. ex Mold., Phytol. Mem. 2: 384 in syn. 1980.

Bibliography: H. Hallier, Meded. Rijks Herb. Leid. 37: 66. 1918; H. J. Lam, Verbenac. Malay. Arch. 272 & 362. 1919; Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 91, 108, & viii. 1921; E. D. Merr., Bibl. Enum. Born. Pl. 515. 1921; A. W. Hill, Ind. Kew. Suppl. 6: 49. 1926; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 63--65, 71, & 89. 1942; Mold., Phytologia 2: 98. 1945; Mold., Alph. List Cit. 1: 32, 234, & 267 (1946), 2: 359 & 622 (1948), 3: 673, 764,

& 854 (1949), and 4:1001, 1002, 1148, & 1241. 1949; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 143, 145, 146, 158, & 160. 1949; Mold., Résumé 187, 192, 193, 215, & 447. 1959; Mold., Fifth Summ. 1: 321 & 357 (1971) and 2: 861. 1971; Mold., Phytologia 31: 395 (1975) and 34: 273. 1976; Mold., Phytol. Mem. 2: 312, 348, 384, 390, & 533. 1980.

A large shrub, treelet, or small tree, 1--16.5 m. tall; clear bole to 15 cm. in diameter and 60 cm. in girth; bark surface smooth and pale-brown, the inner bark whitish or pale yellowish-green to green; living bark white; wood white; branchlets rather stout, terete or obtusely tetragonal, 3--5 mm. thick, conspicuously decussate-flattened and ampliate at the nodes, densely appressed-pubescent with short, strigose, antrorse, grayish-brown or ochraceous hairs throughout, but these sometimes wearing off in age; young twigs often covered with dark-purple hair; nodes not annulate, mostly flattened and ampliate; principal internodes 4--6 cm. long; leaves large, decussate-opposite, numerous, distinctly anisophyllous; petioles terete, rather slender, 2--11 cm. long or longer, densely appressed-pubescent with strigose hairs like those on the branchlets, less so in age, slightly ampliate basally and sometimes collapsing there and at the apex in drying; leaf-blades thin-chartaceous, uniformly dark-green and subnitid on both surfaces, or light-green beneath, brunnescent in drying, ovate, 8--24 cm. long, 3--15 cm. wide, apically acute or acuminate, marginally entire, basally subcordate or cordate to subtruncate (merely acute when immature), sparsely strigillose on both surfaces with widely scattered, often dark-purple hairs above, more densely so on the lamina beneath and densely appressed-strigose along the venation there with hairs similar to those on the petiole, becoming glabrescent on both surfaces of the lamina in age, the lower surface pinnately or subpalmately clathrate-venose, minutely and rather conspicuously glandular-punctulate beneath, often with a few, large, disciform glands in the basal bullation; midrib slender, prominulent and densely appressed-strigose above, rounded-prominent and pubescent beneath; secondaries very slender, 7--9 per side, usually several pairs issuing close together near the base, ascending, rather straight or apically slightly arcuate, anastomosing marginally in many loops, prominulent and strigose on both surfaces or even sharply prominent beneath in age; tertiaries very numerous, issuing at right angles to the secondaries and connecting them, parallel, prominulent beneath, flat or obscure above; inflorescence terminal, pyramidal-paniculate, 8--20 cm. long, 8--12 cm. wide, pedunculate, bracteose; peduncles 3.5--5 cm. long, continuous with and similar to the adjacent branchlet in all respects; pedicels about 3 mm. long; rachis also similar to the branchlets, the sympodia mostly short, 0.5--2.5 cm. long; inflorescence-branches paired, slender, ascending; bracts few, foliaceous, usually subtending the 1 or 2 lowest pairs of inflorescence-branches, stipitate, similar to the leaves in all respects but only 2--4 cm. long and 0.5--1.5 cm. wide; calyx cyathiform, light-green to red-brown or deep-pinkish, glabrous, the tube about 6 mm. long, 5-fid to about 1/4 its length, the lobes about 2 mm. long, apically acute or acuminate, externally loosely grayish-pubescent and

marked apically with a few conspicuous discoid glands; corolla white or with some pink or pale-purple in the throat, glabrous or often dorsally purple-hairy, the tube about 12 mm. long, surpassing the calyx by about one-half, the lobes about 7 mm. long, longer than the exserted portion of the tube; stamens long-exserted, 4 cm. long; filaments white or whitish to pinkish; anthers dark-purple; immature fruit dark-green.

This species is based on *Hallier B.2506* from Sintang, at the foot of Mount K(e)lamm, in western Borneo, collected on February 13, 1894, and *Korthals s.n.* from Palembang, Dukuh, in southeastern Sumatra and *Korthals s.n.* from Martapurah in southeastern Borneo. The last of these three collections probably should not be regarded as a cotype collection because Hallier (1918) notes "Durch kleinere Kelche abweichend" in regard to it. The species is closely related to C. *confusum* H. Hallier, but the indument on the branchlets is usually thicker, the veinlet reticulation more conspicuous, the leaf-blades basally more palmate-veined, bullate, and glanduliferous in the bullations beneath, and the corolla externally glabrous. It also closely resembles C. *infortunatum* L., C. *lanuginosum* Blume, and C. *villosum* Blume.

Collectors have found this plant growing in yellowish-brown soil in disturbed forests after logging, on very steep hills, riverbanks, in primary lowground rainforests and undergrowth forests, in red soil of secondary forests, in forest margins and recent clearings, in ravines, along roadsides, on sandstone outcrops, and in yellow sandy-clay soil on landslides, at 20--155 m. altitude, in flower from September to July, and in fruit from February to April, July, and September to November. It is considered as a medicinal plant by the natives in Borneo.

The corollas are described as "white on *Binnemeijer 100*, *Kostermans 21652*, *Mikil SAN.28062*, *Native collector 2013 & 5286*, and *Yates 2600*, "whitish-green" on *Cuadra A.1471*, "greenish" on *Leopold & al. SAN.73837*, "pinkish" on *Kostermans 13560*, "white with some pinkish in the throat" on *Wilde & Wilde-Duyfjes 18462*, "white, the throat pale-purple" on *Clemens & Clemens 21783*, and "white with pale-pink markings at the center" on *Brooke 8003*.

Vernacular names reported for C. *adenophysum* are "boerta-boerta", "kajoe boerta-boerta", "kajoe boerta-boerta batoe", "kajoe boerta-boerta dolok", "kajoe poerba djolna", and "pămpaî.

The *Ridley s.n.* [Jan. 1, 1915] collection, cited below, differs in having its calyx more densely and spreading short-pubescent and also in having the inflorescence-branches, pedicels, peduncles, and rachis more densely and spreading short-pubescent instead of appressed-strigose.

Merrill (1921) cites only *Hallier 2506* and *Korthals s.n.* from Dutch Borneo [Kalimantan]. *Toroes 184*, *1647*, & *2394* are accompanied by wood sampled in at least the University of Michigan herbarium.

It should be noted here that the Phytologia 2: 98 reference in the bibliography of this species was actually published in 1945 -- not in "1944" as is erroneously stated on the issue-cover.

Toroes 1647 was originally identified as C. *infortunatum* L. and some sheets of *no. 1648* (which is *Blumea balsamifera* DC.) were mis-

labeled and distributed as "*1647*".

Material of C. *adenophysum* has been misidentified and distributed in some herbaria as C. *blumeanum* Schau., C. *infortunatum* Blume, C. *infortunatum* L., C. *villosum* Blume, *Callicarpa* sp., and even *Rubiaceae*. On the other hand, the *Ismawi & Kudi s.n.* [Herb. Sarawak For. Dept. S.32078] and *Paie s.n.* [Herb. Sarawak For. Dept. S.32995], distributed as C. *adenophysum* actually are C. *burmanum* f. *lindawianum* (Lauterb.) Bakh., while *Schuitemaker 107* is C. *lanuginosum* Blume.

Citations: GREATER SUNDA ISLANDS: Kalimantan: *H. Hallier B.2506* (Bz--19695--cotype, Bz--19696--cotype, Ca--236925--cotype, Ld--photo of cotype, N--photo of cotype);*Haviland 1047* (1--photo, K, Ld--photo, N--photo); *Jaheri 1729* (Bz--19697, Bz--19698, Bz--19699); *Kostermans 13560* (N), *21652* (Ba, E--1830380, E--1830381); *Ridley s.n.* [July 1905] (K). Sabah: *Aban G. SAN.9448* (Ld); *Cuadra A.1471* (W--2317112); *Gibbs 4289* (K); *Leopold, Gary, & Dewol SAN.73837* (Sn--33749); *Mikil SAN.28062* [Herb. For. Dept. 40664] (Ld); *Putan SAN.40675* (Ld). Sarawak: *W. M. A. Brooke 8003* (W--2319551, W--2319552); *Chai S.33890* (Ac, Ld); *Chai & al. S.33566* (Ld); *Clemens & Clemens 21783* [field no. 5678] (Bz--19692, E--98790, N, N); *Moitan's Native collectors s.n.* [Marah] (W--2318005); *Native collector 526* (Ph), *2013* (Ph, W--1173768), *5286* (Ca--357639, N, W--1674569); *Ridley s.n.* [Jan. 1, 1915] (K, Ld--photo, Mi--photo, N, N--photo). Sumatra: *H. H. Bartlett 6460* (Mi, Mi, N, W--1551609), *7207* (Mi, N, W--1552016, W--1552017), *7729* (Mi, W--1429579); *Boeea 6671* (Mi, S), *8831* (Mi, N), *10838* (Mi), *10897* (Mi), *11110* (Mi, N); *Blnnemeijer 100* (Bz--19713, Bz--19714, Bz--25554), *237* (Bz--19720, Bz--19721, Bz--19722, N), *241* (Bz--19711); *Diepenhorst H.B.2866* (Bz--19707), *H.B.2867* (Bz--19708), *H.B.2874* (Bz--19709), *s.n.* (Bz--19717, Bz--19718, Bz--19719); *Hagem s.n.* [22/6/91] (V--6830); *Krukoff 4001* (Br, Bz--19710, Mi, W--1750477), *4265* (Mi, N); *Lörzing 5604* (Bz--19712, K, N), *9649* (Bz--19716); *Toroes 184* (Mi, N), *1647 bis* (Mi, N, W--1551609), *2394* (Ca--531442, Mi, N, W--1861030), *2528* (Du--234551, Mi, N, W--1680045), *2668* (Mi, N, W--1680048), *4001* (N), *4342* (Mi, N), *5160* (Ca--530264, Mi, N, W--1681592), *5455* (Mi, N); *Wilde & Wilde-Duyfjes 18462* (W--2940243); *Yates 1032* (Bz--19715, Ca--244209, L, Mi, W--1505738), *2600* (Bz--19706, Bz--19723, Ca--318379, Mi, N). CULTIVATED: Java: *Herb. Hort. Bot. Calcutt. s.n.* (K).

CLERODENDRUM AGGREGATUM Gürke, Engl. Bot. Jahrb. 18: 177 [as "*Clerodendron*"]. 1893; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 53 & 89. 1942.

Synonymy: *Clerodendron aggregatum* Gürke, Engl. Bot. Jahrb. 18: 177. 1893.

Bibliography: Gürke, Engl. Bot. Jahrb. 18: 177. 1893; Durand & Jacks., Ind. Kew. Suppl. 1, imp. 1, 101 (1901) and imp. 2, 101. 1941; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 53 & 89. 1942; Mold., Alph. List Cit. 2: 537. 1948; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 123 & 180. 1949; Mold. in Humbert, Fl. Madag. 174: 154, 234--236, & 266, fig. 38 (1 & 2). 1956; Durand & Jacks., Ind. Kew. Suppl. 1, imp. 3, 101. 1959; Mold., Résumé 155 & 447. 1959; Mold., Fifth Summ. 1: 259 (1971) and 2: 861. 1971; Mold., Phytol. Mem. 2: 248 & 533. 1980.

Illustrations: Mold. in Humbert, Fl. Madag. 174: 235, fig. 38 (1 & 2). 1956.

A large shrub or tree; branchlets medium-slender, light-gray, very obtusely and obscurely tetragonal or subterete, minutely puberulent, glabrescent in age; twigs not noticeably different from the branchlets; nodes not annulate; principal internodes 1.3--3 cm. long, or more abbreviated on some twigs; leaf-scars rather large and prominent, corky-margined; leaves decussate-opposite; petioles slender, 3--14 mm. long, glabrate, flattened and canaliculate above; leaf-blades membranous or thin-membranous, uniformly gray-green on both surfaces, elliptic, 5--15 cm. long, 2.4--6.6 cm. wide, apically long-acuminate, marginally entire, basally attenuate and acute or sub-acuminate, glabrous or glabrescent and densely punctate on both surfaces (the punctae often obscure); midrib very slender, flat above, prominent beneath; secondaries very slender, 5 or 6 per side, arcuate-ascending, flat or subprominulous above, prominulous beneath, arcuately joined in many loops several mm. from the margins beneath; vein and veinlet reticulation very slender, rather sparse, mostly obscure above, only the largest portions slightly subprominulous beneath; inflorescence terminal, cymose, densely many-flowered, sessile or subsessile, subcapitate, 2.3--3 cm. long and wide, the very short peduncles(which are about as long as the calyx), branches of the inflorescence, and pedicels densely short-pubescent with brownish, appressed, antrorse hairs; pedicels 1--5 mm. long; bracts filiform or spatulate, 3--5 mm. long, strigillose; bractlets filiform, strigillose; calyx campanulate or tubular, 2.6--3 mm. long, 1.5 mm. wide, nigrescent, externally pubescent or minutely strigillose, its rim 5-lobed, the lobes ovate-triangular, about 2 mm. long, widely divergent, subulate or caudate-cuspidate; corolla hypocrateriform, its tube narrow-cylindric, 1.5--2.2 cm. long, less than 1 mm. wide throughout, hardly ampliate at the apex, externally very minutely and obscurely pulverulent or glabrate, the limb 5--7 mm. wide; stamens and pistil long-exserted, extending 5--10 mm. beyond the mouth of the corolla.

This species is based on *Hildebrandt 3339* from Loko-bé in northeastern Madagascar, collected in February, 1880, and deposited in the Berlin herbarium, now destroyed. Gürke's original description is sometimes cited as "1894", the volume titlepage date, but was actually published in 1893.

The *Kaudern s.n.* [Catrèpe, Mai 1912] and *s.n.* [Majunga, Juli 1912], distributed as *C. aggregatum*, are actually *C. kauderni*

Citations: NOSY-BÉ ISLAND: *Boivin s.n.* [March 1851] (P); *Waterlot 263* (N, P). MINO ISLAND: *Richard s.n.* (P). MADAGASCAR: *Baron 4546* (P); *Hildebrandt 3339* (F--photo of isotype, K--isotype, L--isotype, Ld--photo of isotype, Mu--1632--isotype, N--photo of isotype, P--isotype); *Kaudern s.n.* [Majunga, Sept. 1912] (S).

CLERODENDRUM ALATUM Gürke, Engl. Bot. Jahrb. 18: 182 [as "*Clerodendron*"]. 1893; Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 83 & 92. 1936.

Synonymy: *Clerodendron alatum* Gürke, Engl. Bot. Jahrb. 18: 182.

1893. *Clerodendron fleuryi* A. Chev., Mém. Soc. Bot. France, ser. 2, 8: 191. 1911. *Clerodendron hexagonum* DeWild., Bull. Jard. Bot.Brux. 7: 169--170. 1920. *Clerodendron lelyi* Hutch. & Dalz., Kew Bull. Misc. Inf. 1921: 395. 1921. *Clerodendrum hexagonum* DeWild. apud Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 83 in syn. 1936. *Clerodendrum lelyi* Hutch. apud Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 83 in syn. 1936. *Clerodendrum fleuryi* A. Chev. apud Roberty, Pet. Fl. Ouest-Afr. 179. 1954. *Clerodendrum lelyi* Hutch. & Dalz. apud Huber in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 2: 441 in syn. 1963.

Bibliography: Gürke, Engl. Bot. Jahrb. 18: 182. 1893; Briq. in Engl. & Prantl, Nat. Pflanzenfam., ed. 1, 4 (3a): 175. 1895; J. G. Baker in Thiselt.-Dyer, Fl. Trop. Afr. 5: 295, 310, & 311. 1900; Durand. & Jacks., Ind. Kew. Suppl. 1, imp. 1, 101. 1901; A. Chev., Bull. Soc. Bot. France 58, Mem. 8d: 191. 1911; DeWild., Bull. Jard. Bot. Brux. 7: 169. 1920; J. Hutchins., Kew Bull. Misc. Inf. 1921: 395. 1921; A. W. Hill, Ind. Kew. Suppl. 6: 49. 1926; Fedde & Schust., Justs Bot. Jahresber. 48 (1): 497. 1927; Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 1, 2: 273. 1931; B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] , 7, 17, 47, 83--84, 92, & 93. 1936; Durand & Jacks., Ind. Kew. Suppl. 1, imp. 2, 101. 1941; Mold., Alph. List Inv. Names 17, 19, & 21. 1942; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 45--47, 76, & 89. 1942; Mold., Alph. List Inv. Names Suppl. 1: 6. 1947; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 109, 110, 113, 114, & 180. 1949; Roberty, Pet. Fl. Ouest-Afr. 179. 1954; Durand & Jacks., Ind. Kew. Suppl. 1, imp. 3, 101. 1959; Mold., Résumé 133, 134, 136--138, 140, 263--265, 267, 273, 447, & 449. 1959; Cuf., Bull. Jard. Bot. Brux. 32: Suppl. 798. 1962; H. Huber in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 2: 439 & 441. 1963; Mold., Résumé Suppl. 15: 5--7, 18, & 19. 1967; Mold., Fifth Summ. 1: 209, 210, 212, 216, 219, 221, 223, 228, 444, 446, 449, 451, 461, 463, & 464 (1971) and 2: 861. 1971; Mold., Phytol. Mem. 2: 199, 201, 203, 206, 209, 212, 213, 218, & 533. 1980.

A large, erect, herbaceous or subherbaceous subshrub, 0.5--1.5 m. tall; stems stout, tetragonal, narrowly alate, glabrous; branches erect, 6-angulate, glabrous, the angles broadly winged; leaves decussate-opposite or more usually ternate, sessile, coriaceous or papyraceous, oblanceolate or cuneate-lanceolate to lanceolate-elliptic or even long-obovate-oblanceolate, apically acute or short-acuminate, marginally more or less deeply sharp-toothed on the upper third or subentire, basally obtuse, glabrous on both surfaces, the upper ones 10--18 cm. long and 3--3.8 cm. wide, the lower ones 25--30 cm. long and 3.7--5 cm. wide above the middle; secondaries about 12 per side; inflorescence axillary or terminal, pedunculate, thyrsoid-paniculate; peduncles elongate; rachis glabrous; cymes lax, many-flowered, ternate in the leaf-axils; bracts linear to lanceolate, to almost 1 cm. long; bractlets and prophylla linear, 2--3 mm. long; flowers pedicellate, the peduncles 3--5 cm. long; calyx campanulate, green, 4--5 mm. long, externally glabrous, 5-dentate or 5-lobed to the middle, the teeth or lobes deltoid-ovate, 2--2.5 mm. long, 1--1.5 mm. wide, apically acute or obtuse and often violet in color,

marginally ciliolate; corolla blue-purple, violet, or mauve, glabrous, twice as long as the calyx, its tube very short, zygomorphic, broad, curvate, 0.8--3.4 cm. long, the limb 5-lobed, the lobes 3--4 mm. long, externally white, internally pale-lilac. or the upper lobes white and the lower middle lobe deep-violet with 2 white dark violet-fringed central blotches, all the lobes lanceolate, apically obtuse; stamens & pistil "violet-white", long-exserted; filaments basally tomentose.

This species is based on *Schweinfurth 3796* from Niamniam, Tuhamis Seriba, in the Chasel region of Sudan, deposited in Berlin but now destroyed; *C. lelyi* is based on *Lely 384* from 1400 m. altitude at Mongo, Zambia, collected on July 8, 1921, deposited at Kew; *C. hexagonum* is based on *Blommaert 182* from Zaire, deposited at Brussels.

Gürke (1893) comments that "Die Art ist sehr auffällend durch die geflügelten Stengel und durch die keilförmigen, lanzettlichen, sitzenden, sehr grossen Blätter. Ausser diesen Merkmalen unterschiedet sie sich auch von *C. myricoides* besonders durch die aufrechten, geraden, nur wenig verholzten Stengel, während letztere Art stets ein stark verzweigter Strauch ist."

Collectors have encountered the species at 1400 m. altitude, in flower in May, June, and August. A vernacular reported for it is "kpe-dokpo".

Thomas (1936) maintains *C. fleuryi* as distinct from *C. alatum*, distinguishing the two taxa as follows:

"Stengel braunrot; Blätter bis 15 cm lang, ca. 3 cm breit, am vorderen Teil gezähnt; Blütenstand ± oberhalb der Blätter.....
.....*C. alatum.*

Stengel grünbräunlich; Blätter ca. 10 cm lang, fast ganzrandig; Blütenstand stark beblättert.....*C. fleuryi.*

Huber (1963), however, maintains that the two are conspecific. He cites *Chevalier 22160* from Ivory Coast and *Dalziel 119, Dent Young 205, Keay F.H.I.37099, Lely 384,* and *Noble 18* from Zambia, listing the species also from Cameroons, Zaire, Egypt, Sudan, and Ethiopia.

Baker (1900) cites only *Schweinfurth 3796* from "British East Africa".

Thomas (1936) cites *Schweinfurth 40, 41, 3230,* & *3796* from the Sudan, *Steudner 1310* from Ethiopia, and *Blommaert 182* from Zaire.

The corollas are described as having been "violet" on *Lebrun 3160* and "mauve" on *DeGraer 598.* Another collector describes the flowers as "edge of sepals violet, rest green; 4 petals violet-white, 1 petal silvery-violet; stamens and pistil violet-white".

Gürke's original (1893) description is sometimes cited as "1894", the volume titlepage date, but the page that concerns us here was validly published already in 1893.

Cufodontis (1962) cites only *Schweinfurth 3796.*

Citations: SUDAN: *Schweinfurth 3796* (S--isotype). ZAIRE: *Blommaert 182* (Br, Ld--photo, N--photo); *DeGraer 100* (Br, N), *598* (Br, Br); *Lebrun 3160* (Br, Br, N).

CLERODENDRUM ALATUM var. *FLORIBUNDUM* (J. G. Baker) Mold., Alph. List Inv. Names 19 & 21 hyponym (1942); Known Geogr. Distrib. Verbenac., ed. 1, 45, 47, 76, & 89 nom. nud. 1942; comb. nov.

Synonymy: *Clerodendron myricoides* var. *floribundum* J. G. Baker in Thiselt.-Dyer, Fl. Trop. Afr. 5: 310. 1900. *Clerodendrum alatum* var. *adamauense* Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 83. 1936. *Clerodendrum myricoides* var. *adamauense* Thomas ex Mold., Alph. List Inv. Names 21 in syn. 1942.

Bibliography: J. G. Baker in Thiselt.-Dyer, Fl. Trop. Afr. 5: 310. 1900; B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 83. 1936; Mold., Alph. List Inv. Names 19 & 21. 1942; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 45, 47, 76, & 89 (1942) and ed. 2, 109, 113, & 180. 1949; Mold., Résumé 133, 138, 267, 273, & 447. 1959; Mold., Fifth Summ. 1: 210, 223, 451, & 464 (1971) and 2: 861. 1971; Mold., Phytol. Mem. 2: 201, 213, & 533. 1980.

This variety differs from the typical form of the species in the whole plant being glabrous, the leaf-blades long-lanceolate, and the cymes forming a lax thyrsoid panicle 30 cm. or more in length, according to Baker (1900), while Thomas (1936) distinguishes his variety, which seems to be identical, as "Kelchzipfel halbkreisförmig rund, sich gegenseitig deckend; Blätter breiter und nicht so lang wie bei der Hauptart."

The variety is based on *Schweinfurth 3887* from Gumango Hill in the Sudan.

Thomas (1936) cites *Schweinfurth 3887* from the Sudan and *Ledermann 4290* & *4935* and *Mildbraed 9251* & *9393* from the Cameroons.

Citations: SUDAN: *Schweinfurth 3887* (Ld--photo of isotype, N--photo of isotype, S--isotype).

CLERODENDRUM ALATUM var. PUBESCENS Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 83. 1936.

Bibliography: B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 83. 1936; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 47 & 89 (1942) and ed. 2, 113 & 180. 1949; Mold., Résumé 138 & 447. 1959; Mold., Fifth Summ. 1: 223 (1971) and 2: 861. 1971; Mold., Phytol. Mem. 2: 213 & 533. 1980.

This variety differs from the typical form of the species in having the stems and calyx somewhat hairy.

The variety is based on *Mildbraed 9686* and *Tessmann 2662* from Baja, Buar, in the Cameroons, collected, respectively, on June 22 and July 18, 1914, deposited in the Berlin herbarium, now doubtless destroyed. It is known thus far only from these collections.

CLERODENDRUM ALBIFLOS H. J. Lam, Verbenac. Malay. Arch. 287--288 [as "*Clerodendron*"]. 1919; Mold., Alph. List Inv. Names 16. 1942.

Synonymy: *Clerodendron albiflos* H. J. Lam, Verbenac. Malay. Arch. 287. 1919. *Clerodendron albiflos* var. *puberulentum* H. J. Lam, Verbenac. Malay. Arch. 288. 1919.

Bibliography: H. J. Lam, Verbenac. Malay. Arch. 287--288 & 362. 1919; Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 91, 108, & viii. 1921; A. W. Hill, Ind. Kew. Suppl. 6: 49. 1926; Fedde & Schust., Justs Bot. Jahresber. 60 (2): 572. 1941; Mold., Alph. List Inv. Names 16. 1942; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 67 & 89 (1942) and ed. 2, 148 & 180. 1949; Mold., Résumé 200, 260,

266, & 447. 1959; Mold., Fifth Summ. 1: 335, 439, & 449 (1971) and 2: 861 & 862. 1971; Mold., Phytol. Mem. 2: 325 & 533. 1980.

A small tree; branchlets terete, densely fuscous- or ferruginous-pubescent; leaves decussate-opposite, often anisophyllous and inequilateral; petioles 1--9.5 cm. long, often those of a pair 1.5 and 9.5 cm. long respectively; leaf-blades membranous or subchartaceous, oblong or ovate-oblong, 13.5--33.5 cm. long, 4.7--11.7 cm. wide, apically long-acuminate, marginally entire, basally acute or truncate, softly pubescent on both surfaces and ornamented with separate peltate scales beneath, or sparsely pubescent above with the venation puberulent; secondaries 8--10 per side; inflorescence terminal, paniculate, 10--14 cm. long, 8 cm. wide; peduncles 2.5--5 cm. long; bracts small, foliaceous; cymes opposite, di- or trichotomous; pedicels 4--6 mm. long, each subtended by a single bracteole; calyx cupuliform, 4 mm. long, externally sparsely pubescent, the rim 5-dentate, the teeth deltoid, 1 mm. long; corolla white, externally glabrous or very sparsely puberulent, the tube cylindric, 1.2--1.5 cm. long, the lobes ovate, apically rounded; stamens inserted in the corolla-tube, exserted 1.5--1.8 cm.; filaments slender; anthers ovoid, 1.25 mm. long, the thecae connate, not divaricate; style exserted 1.5--1.8 cm.; stigma bifid; fruit drupaceous, black, 9--11 mm. wide.

This species is based on *Zippel s.n.* [Herb. Lugd.-Bat. 908.266-637] deposited in the Leiden herbarium, the only known collection. Lam (1919) notes that "This plant is, though closely allied to *C. Lindawianum*, distinctly different from it by its oblong or elliptical, never cordate leaves, its glabrous corolla-lobes, and longer corolla-tube."

CLERODENDRUM ALBIFLOS var. *GLABRIOR* (Gibbs) H. J. Lam, Verbenac. Malay. Arch. 288 [as "*Clerodendron*"]. 1919; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 67. 1942.

Synonymy: *Clerodendron Lindawianum* var. *glabrior* Gibbs, Dutch Northw. New Guinea 218. 1917. *Clerodendron albiflos* var. *glabrior* (Gibbs) H. J. Lam, Verbenac. Malay. Arch. 288. 1919

Bibliography: Gibbs, Dutch Northw. New Guinea 218. 1917; H. J. Lam, Verbenac. Malay. Arch. 288. 1919; Fedde & Schust., Justs Bot Jahresber. 60 (2): 572. 1941; Kanehira & Hatusima, Bot. Mag. Tokyo 56: 113. 1942; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 67 & 89 (1942) and ed. 2, 148 & 180. 1949; Mold., Résumé 200, 260, 266, & 447. 1959; Mold., Fifth Summ. 1: 335, 439, & 449 (1971) and 2: 862. 1971; Mold., Phytol. Mem. 2: 325 & 533. 1980.

This variety differs from the typical form of the species in having the leaf-blades subglabrate above, only the larger venation pubescent, and only sparsely pubescent beneath.

The variety is based on *Gibbs 6264* from 400 m. altitude at Humboldt Bay, West Irian, in both flower and fruit in January. Kanehira & Hatusima (1942) cite their *nos. 12064* & *12326* from forests on serpentine rock at about 500 m. altitude, also in West Irian.

Nothing is known to me of this taxon or the previous one except what is stated in the bibliography.

CLERODENDRUM ALBOVIOLACEUM Mold., Bull. Torrey Bot. Club 77: 392--393. 1950.

Bibliography: Mold., Bull. Torrey Bot Club 77: 392--393. 1950; E. J. Salisb., Ind. Kew. Suppl. 11: 56. 1953; Mold. in Humbert, Fl. Madag. 174: 151, 197--199, & 266, fig. 32 (1). 1956; Mold., Résumé 155 & 447. 1959; Mold., Fifth Summ. 1: 259 (1971) and 2: 862. 1971; Mold., Phytol. Mem. 2: 248 & 533. 1980.

Illustrations: Mold. in Humbert, Fl. Madag. 174: 199, fig. 32 (1). 1956.

A shrub, 5--8 m. tall; branchlets stout, brown, shiny, obtusely tetragonal, rather sparsely lenticellate, glabrous, not twiggy; nodes not annulate; principal internodes 2.5--3.5 cm. long; leaves decussate-opposite; petioles stout, 1--2 cm. long, nigrescent, glabrous, much ampliate and disciform at the base; leaf-blades coriaceous, elliptic-obovate or obovate, 15--22 cm. long, 3.5--9 cm. wide, apically short-acuminate, marginally entire, basally attenuate-acute, glabrous on both surfaces, some smaller ones sometimes interspersed with the normal-sized ones; midrib stout, flat above, stout beneath; secondaries slender, 6 or 7 per side, arcuate-ascending, flat above, prominulent beneath, not plainly anastomosing; vein and veinlet reticulation rather fine and abundant, mostly obscure on both surfaces or the larger parts slightly subprominulous beneath; inflorescence terminal, nigrescent throughout; peduncles obsolete or absent, but the 1--3-flowered cymes long-stipitate, the peduncle-like stalks about 5 cm. long, stout, shiny, glabrous; bracts ovate, fleshy, to 7 mm. long and 4 mm. wide, apically acute, subtending the cyme-branches; bractlets filiform, subtending the pedicels, caducous; pedicels stout, 1.5--2.5 cm. long, stiffly erect, glabrous, shiny; calyx tubular, coriaceous, nigrescent, not venose, 2.5--3.3 cm. long, 12--13 mm. wide, externally glabrous, its rim 5-lobed, the lobes erect, ovate-triangular, about 5 mm. long and wide; corolla hypocrateriform, its tube violet, narrow-cylindric, 4--5 cm. long, about 1.5 mm. wide above the calyx, ampliate only at the very apex, the limb white, 3--3.5 cm. wide, the 5 lobes 1.2--2 cm. long, apically obtuse or rounded; stamens and pistil long-exserted, extending about 3 cm. beyond the mouth of the corolla-tube, violet.

The type of this species was collected by Henri Perrier de la Bâthie (*no. 10271*) on basaltic lava in woods, at 20 m. altitude, at Bas Malilam, Madagascar, in August 1911, and is deposited in the Paris herbarium. The species is known thus far only from the original collection.

Citations: MADAGASCAR: *Perrier 10271* (F--photo of type, Ld--photo of type, N--isotype, N--photo of type, P--type).

CLERODENDRUM ALBUM Ridl. ex Mold., Known Geogr. Distrib. Verbenac., ed. 1, 69 & 89 nom. nud. 1942.

Bibliography: Mold., Known Geogr. Distrib. Verbenac., ed. 1, 69 & 89 (1942) and ed. 2, 152 & 180. 1949; Mold., Alph. List Cit. 4: 1093, 1949; Mold., Résumé 208 & 447. 1959; Mold., Fifth Summ. 1: 345 (1971) and 2: 862. 1971; Mold., Phytol. Mem. 2: 334 & 533. 1980.

As yet I have not been able to ascertain where, if at all, Ridley published a description of this taxon, known to me only from herb-

arium specimens so annotated; apparently previously, at least in one case, distributed as C. *coriaceum* R. Br.

Citations: AUSTRALIA: Queensland: A. *Dietrich s.n.* [Brisbane, 1863-65] (B); *Verreaux 650* (L, N--photo).

CLERODENDRUM AMPLIFOLIUM S. Moore, Journ. Linn. Soc. Lond. Bot. 40: 167 [as "*Clerodendron*"]. 1911; B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] () & 92. 1936.

Synonymy: *Clerodendron amplifolium* S. Moore, Journ. Linn. Soc. Lond. Bot. 40: 167. 1911.

Bibliography: S. Moore, Journ. Linn. Soc. Lond. Bot. 40: 167. 1911; Fedde & Schust., Justs Bot. Jahresber. 39 (2): 319. 1913; Prain, Ind. Kew. Suppl. 5, imp. 1, 61. 1921; B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 90 & 92. 1936; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 51 & 89 (1942) and ed. 2, 120 & 180. 1949; Mold., Résumé, 148, 150, & 448. 1959; Prain, Ind. Kew. Suppl. 5, imp. 2, 61. 1960; Mold., Fifth Summ. 1: 247 & 250 (1971) and 2: 862. 1971; Mold., Phytol. Mem. 2: 206, 240, & 533. 1980.

A tall shrub; leaf-bearing branches rather flattened, more or less pubescent, later subterete and covered with pale-brown glabrous bark; leaves decussate-opposite; petioles broad, about 1 cm. long, pubescent; leaf-blades large, rather thickly membranous, ovate, 9--15 cm. long, 6.5--8 cm. wide, apically cuspidate-acuminate and mucronate, basally rounded and plainly narrowed into the petiole, scarcely 1 cm. wide slightly above the base, at the very base only 5 mm. wide, marginally rather coarsely serrate-crenate (the teeth 4--11 mm. wide and 1--1.5 mm. high), olivaceous in drying and grayish beneath, pubescent along the venation on both surfaces with small whitish hairs; secondaries about 8 per side, the lower ones patulous and very broadly arcuate, the upper ones ascending; inflorescence cymose, pedunculate, the cymes many-flowered, lax, pubescent, to 8 cm. long (excluding the corollas); peduncles about 4.5 cm. long; bracts linear or linear-oblong, about 8 mm. long, apparently purple, apically obtuse, puberulent; pedicels 5--25 mm. long, equaling or surpassing the calyx in length, puberulent, bearing 2 small linear bracteoles near the middle; flowers proportionately large; calyx campanulate, 7.5 mm. long, the tube 4 mm. long, divided to the middle into ovate-oblong lobes which are 3.5 mm. long and about 3 mm. wide, apically obtuse, interiorly very minutely lepidote; corolla-tube 11 mm. long, about twice as long as the calyx, 3.5 mm. wide at the very base, 5 mm. wide somewhat above the base, the throat slightly contracted and only 4 mm. wide, the lobes of the limb narrowly obovate-oblong, 12--14 mm. long, 5--6.5 mm. wide, apically very obtuse, somewhat exceeding the tube in length; stamens long-exserted; filaments surpassing the corolla-tube by about 3 cm., basally glandular-villosulous; anthers oblong, 2 mm. long; style about 3.5 cm. long; stigma bifid, the branches unequal, one 2 mm. and the other 2.5 mm. long; ovary ovoid, 3 mm. long.

This species is based on *Swynnerton 335* from Chirinda Forest, at 3700--4000 feet altitude, Gazaland, Mozambique, deposited in the British Museum herbarium -- however, a photograph of the type in the Missouri Botanical Garden herbarium shows the annotation "Zimbabwe"

as the source of the collection.

The species is obviously a member of the subgenus *Cyclonema* and Moore (1911) comments that it is "Allied to *C. myricoides*, R. Br., but [is] different from all the recently described species with this affinity. The large, very broad crenate leaves enable one to distinguish it on sight." It has been collected in flower in April.

Thomas (1936) cites only the type collection, asserting that he did not see any actual material; he therefore places the species in his Species Dubiae.

Citations: ZIMBABWE: *Whellan 349* [Govt. Herb. Salisbury 21071] (Ld--photo, N, N--photo, Rh). MOZAMBIQUE: Gazaland: *Swynnerton 335* [Mo. Bot. Gard. Type Photo A.881] (Ba--photo of type, E--1983911--photo of type, Gz--photo of type, Ld--photo of type, N--photo of type, W--photo of type).

CLERODENDRUM ANAFENSE Britton & P. Wils., Mem. Torrey Bot. Club 16: 99. 1920.

Synonymy: *Clerodendron anafense* Britton & P. Wils. apud A. W. Hill, Ind. Kew. Suppl. 6: 49. 1926.

Bibliography: Britton & P. Wils., Mem. Torrey Bot. Club 16: 99. 1920; A. W. Hill, Ind. Kew. Suppl. 6: 49. 1926; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 24, 71, & 89. 1942; Mold., Alph. List Cit. 1: 185, 187, 188, & 316 (1946), 2: 332, 475, 487, 577--579, 601, 646, 648, & 652 (1948), 3: 757, 867, 868, & 889 (1949), and 4: 1043, 1065, 1068, & 1137. 1949; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 43, 158, & 180. 1949; Alain in León & Alain, Fl. Cuba, imp. 1, 4: 319 & 322. 1959; Mold., Résumé 51, 215, & 448. 1959; Mold., Fifth Summ. 1: 95 & 357 (1971) and 2: 862. 1971; Alain in Leon & Alain, Fl. Cuba, imp. 2, 2: 319 & 322. 1974; Mold., Phytol. Mem. 2: 88, 348, & 533. 1980; Reis & Lipp, New Pl. Sources Drugs 250. 1982.

A shrub or small tree, 4--10 m. tall; trunk 7--10 cm. in diameter; bark gray, rough; older branches gray or white, often not shiny, usually much thickened at the nodes; branchlets stout, very obtusely tetragonal or subterete, glabrous and very shiny with an almost varnished appearance, gray or buff, marked with numerous and somewhat raised lenticels but not verrucose; twigs stout, stiff, more or less puberulent or short-pilose to minutely and sparsely hispidulous at the apex, glabrous below, shiny, yellowish or buff to brownish or gray in color, with a varnished aspect; nodes not annulate; principal internodes 0.5--4 cm. long; leaves decussate-opposite or rarely subopposite, numerous, short-petiolate; petioles stout, 6--18 mm. long, more or less puberulent or minutely and very sparsely hispidulous and obscurely verruculose, flattened and canaliculate above, not noticeably ampliate at the base, but leaving large, corky, raised, crateriform leaf-scars when the leaves are shed; leaf-blades coriaceous, heavy, firm, brittle, semi-deciduous, dark- or gray-green above, light-green beneath, oblong or elliptic to oblanceolate or slightly elliptic-obovate, 2.7--15 cm. long, 1.3--6.1 cm. wide, apically acute or very short-acuminate, rarely rounded, basally rounded or acute, marginally entire or more or less sharply dentate with short apiculate teeth, usually more or less revolute in drying,

glabrous on both surfaces, rather shiny; midrib rather stout, flat and sometimes minutely and obscurely hispidulous above, very prominent beneath; secondaries 5--7 per side, arcuate-ascending, usually arcuately joined near the margins, flat or obscurely impressed above, very prominent beneath; vein and veinlet reticulation abundant, rather coarse, obscure or subimpressed above, very conspicuously prominulent beneath; inflorescence axillary, solitary, opposite, much shorter than the subtending leaves, 3.5--6 cm. long, 1.5--5 cm. wide, di- or trichotomous, loosely 4--7-flowered, glabrate throughout; peduncles comparatively slender, 3--8 mm. long, glabrous; branches of the inflorescence slender, equaling or exceeding the pedicels in length; pedicels slender, 0.8--2 cm. long, apically somewhat thickened in the fruiting stage; bracts and bractlets absent; prophylla linear, 1--3 mm. long, glabrate or pilose; calyx campanulate, 3.5--4 mm. wide, externally glabrous, apically truncate; corolla white, 2--2.5 cm. long, the lobes oblanceolate to obovate, about 5 mm. long; stamens long-exserted; filaments filiform; anthers narrowly ovate or elliptic; fruiting-calyx cupuliform, coriaceous, 4--6 mm. long, 7--11 mm. wide, externally glabrate, striate-venose, its rim varying from entire and truncate to irregularly lobed with wide apically truncate lobes; fruit drupaceous, oblong or oval, 10--13 mm. long, 10 mm. wide, red or purplish-red and lustrous when ripe, nigrescent in drying, rather fleshy or pulpy, much eaten by birds.

This species is based on *Wilson & León 11466* from the Sierra de Anafe, Pinar del Rio, Cuba, collected on December 21, 1911, and deposited in the Britton Herbarium at New York; *Wilson & León 2831* is said to be from the same tree as the type collection.

The species exists in cultivation in Santa Clara, Cuba [vid., List Pl. Atkins Inst. 59. 1933] from wild material collected by J. G. Jack at Limones, Cuba, in 1927. The species is reduced to synonymy under *C. tuberculatum* A. Rich. by Grey & Hubbard in the reference cited above.

The leaf size and shape are very variable in this species and the leaf-margins vary from entire and revolute to sharply short-dentate, the dentate leaves usually being found on seedlings or suckers. The very shiny varnished appearance of the young branches, branchlets, and twigs is striking.

Collectors have encountered *C. anafense* in woodland pastures, open woods, rocky woods and their borders, on rocky hillsides, and in exposed situations, in anthesis from December to March, and in fruit from January to March.

Clerodendrum anafense may actually be conspecific with *C. tuberculatum* A. Rich., with which it has often been identified, but until the actual type of the latter can be examined it seems advisable to maintain the two taxa as separate. Richard's description does not agree very well with any of the specimens labeled as "*C. tuberculatum*" which I have seen, especially in regard to the tubercles, the lower leaf-surfaces, the innovations, and the length of the inflorescences as compared to that of the leaves. On the other hand, I can find no difference between these specimens and the *C. anafense* material identified by Britton & Wilson.

Alain (1957) reports the species from the provinces of Havana, Las Villas, Oriente, and Pinar del Rio in Cuba. Reis & Lipp (1982) cite *Jack 8724* from Cuba.

The Cuban species of *Clerodendrum* may be distinguished as follows:

1. Introduced or cultivated Old World herbaceous perennials, with thin, broad, basally usually deeply cordate leaf-blades.
  2. Corollas scarlet, single.....C. *speciosissimum*.
  2. Corollas white or pinkish, doubled..C. *philippinum* f. *multiplex*.

1a. Indigenous shrubs or small trees, with coriaceous oblong to ovate or obovate leaf-blades.
  3. Leaf-blades glabrous on both surfaces, marginally entire.
    4. Corolla yellow, tubular, the limb very small; leaf-blades mostly obovate or oblanceolate.....C. *grandiflorum*.
    4a. Corolla white, salverform, the limb spreading.
      5. Leaf-blades obovate to oblanceolate, very short-petiolate; calyx-limb ampliate.....C. *cubense*.
      5a. Leaf-blades mostly elliptic, distinctly petiolate; calyx-limb not spreading.....C. *anafense*.
  3a. Leaf-blades puberulent or pubescent beneath.
    6. Leaf-blades puberulent and coarsely reticulate-veined beneath.
      7. Corolla-tube 1--1.5 cm. long.....C. *lindenianum*.
      7a. Corolla-tube up to 3 cm. long.
        8. Leaf-blades narrow, to about 2 cm. wide.....C. *nipense*.
        8a. Leaf-blades to 6 cm. wide.C. *lindenianum* var. *camagueyense*
    6a. Leaf-blades pubescent and finely strongly reticulate beneath.
      9. Leaf-blades both apically and basally rounded.C. *tuberculatum*
      9a. Leaf-blades basally subcordate, apically acute or obtuse.. .....C. *calcicola*.

Citations: CUBA: Havana: *Ekman 16916* (B, Mi, S, W--2113957); *León 13654* (Ha); *Roig & Acuña 14057* (Es, Es). Las Villas: *J. G. Jack 4794* (A, K, N, P, W--1477901), *4845* (A, N, W--1477888), *4846* (A, K, N, P, W--1477889), *4847* (A, Cb, K, N, P), *5398* (A, K, N, P, W--1477893, W--1556073), *5401a* (Ha, N),*5562* (A, Mi, Po--174967), *5572* (A, N), *5587* (A, Ha, K, N, N, P, W--1476584, Y--16624), *5588* (A, A, Ha, N, N, P, W--1477824), *5636* (A, N, W--1477825), *7799* (A), *8017* (B, S, W--1478050), *s.n.* [Oct. 7, 1928] (F--689285, W--1555828); *Roig 6164* (Es). Oriente: *Alain 3227* (Ld); *Clemente & Clemente 4961* (Ha); *Ekman 4754* (B, S), *4824* (B, S), *6499* (N, S), *14156* (B, S). Pinar del Río: *León 2831* [Herb. Roig 5786] (B, Es, N); *P. Wilson 11356* (N, N); *Wilson & Leon 2831* (Ha), *11466* (F--493109--isotype, N--type, N--isotype, W--1047751--isotype). Province undetermined: *Sagra 215* in part (B), *s.n.* (B). CULTIVATED: Cuba: *J. G. Jack 8724* (A, Gg--237828, N, N). Massachusetts: *Judd s.n.* [seed of Jack 5587] (A).

CLERODENDRUM ANGOLENSE Gürke, Engl. Bot. Jahrb. 28: [291] [as "*Clerodendron*"]. 1900; B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 62. 1936.

Synonymy: *Clerodendron speciosum* Gürke, Engl. Bot. Jahrb. 18: 171--172. 1893 [not *C. speciosum* Dombrain, 1869, nor D'Ombrain, 1980, nor Hort., 1869, nor Lam., 1980, nor Lemaire, 1869. nor Teijsm. & Binn., 1866]. *Clerodendron angolense* Gürke, Engl. Bot. Jahrb. 28:

[291]. 1900. *Clerodendron hysteranthum* J. G. Baker in Thiselt.-Dyer, Fl. Trop. Afr. 5: 306. 1900. *Clerodendron megasepalum* J. G. Baker in Thiselt.-Dyer, Fl. Trop. Afr. 5: 306. 1900. *Clerodendron megalosepalum* Bak. ex K. Schum., Justs Bot. Jahresber. 28 (1): 495. 1900. *Clerodendron orbiculare* J. G. Baker in Thiselt.-Dyer, Fl. Trop. Afr. 5: 307. 1900. *Clerodendron poggei* Gürke, Engl. Bot. Jahrb. 28: 309. 1900. *Siphonanthus sanguinea* Hiern, Cat. Afr. Pl. Welw. 4: 839--840. 1900. *Clerodendron sanguineum* "(Hi. sub *Siphonanthus*) Welw." ex K. Schum., Justs Bot. Jahresber. 28 (1): 496. 1900. *Clerodendron sanguineum* Welw. ex K. Schum., Justs Bot. Jahresber. 28 (1): 496. 1902. *Clerodendron capitatum* var. *butayeri* DeWild., Ann. Mus. Congo Bot., ser. 4, 1: 118. 1903. *Clerodendron angolensis* DeWild., Pl. Bequaert. 2: 261 sphalm. 1922. *Clerodendron sanguineum* K. Schum. ex DeWild., Pl. Bequaert. 2: 256 in syn. 1922. *Siphonanthus sanguineus* (K. Schum.) Hiern ex DeWild., Pl. Bequaert. 2: 256 in syn. 1922. *Clerodendrum capitatum* var. *butayei* DeWild. apud B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 62 in syn. 1936. *Clerodendrum hysteranthum* J. G. Baker apud B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 62 in syn. 1936. *Clerodendrum megasepalum* J. G. Baker apud B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 62 in syn. 1936. *Clerodendrum orbiculare* J. G. Baker apud B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 62 in syn. 1936. *Clerodendrum poggei* Gürke apud B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 62 in syn. 1936. *Clerodendrum speciosum* Gürke apud B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 62 in syn. 1936. *Clerodendron capitatum* var. *butayei* DeWild. ex Mold., Alph. List Inv. Names 6 in syn. 1947. *Clerodendron angolense* Welw., in herb. *Clerodendron angolum* Gürke, in herb.

Bibliography: Gürke, Engl. Bot. Jahrb. 18: 171--172. 1893; Gürke in Engl., Pflanzenw. Ost-Afr. C: 340, 1895; J. G. Baker in Thiselt.-Dyer, Fl. Trop. Afr. 5: 294, 306, 307, 309, & 518. 1900; Gürke, Engl. Bot. Jahrb. 28: [291]. 1900; Hiern, Cat. Afr. Pl. Welw. 4: 839--840 & 843. 1900; K. Schum., Justs Bot. Jahresber. 28 (1): 495--496. 1900; DeWild., Ann. Mus. Congo Bot., ser. 4, 1: 118. 1903; Thiselt.-Dyer, Ind. Kew. Suppl. 2: 43 & 172. 1904; DeWild., Ann. Mus. Congo Bot., ser. 5, 3: 131 (1909) and ser. 5, 3: 467. 1912; DeWild., Bull. Roy. Soc. Bot. Belg. 51 [ser. 2, 1]: 91, 132, 280, & 306. 1913; Bequaert in Wheeler, Bull. Am. Mus. Nat. Hist. 45: 444. 1922; De Wild., Pl. Bequaert 2: 256 & 260--261. 1922; Pellegrin, Mém. Soc. Linn. Normand. Bot. 26 [ser. 2, 1 (3)]: 50. 1928; B. Thomas, Engl. Bot. Jahrb. 68 [Gatt. Clerod.] 6, 13, 26, 36, 62--63, & 92. 1936; Mold., Prelim. Alph. List Inv. Names 21. 1940; Mold., Alph. List Inv. Names 18--20 & 41. 1942; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 47, 48, 50, & 89. 1942; Mold., Alph. List Inv. Names Suppl. 1: 5 & 6. 1947; Mold., Alph. List Cit. 3: 723. 1949; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 113, 115, 118, & 180. 1949; Mold., Résumé 138, 140, 146, 215, 260, 261, 264, 266--269, 344, 426, & 448. 1959; Mold., Résumé Suppl. 1: 9 (1959), 9: 3 (1964), and 12: 6. 1965; Grout de Beaufort & Schnell, Mém. Inst. Fond. Afr. Noire 75: [7], 9, & 41. 1966; Mold., Fifth Summ. 1: 223, 226, 228, 232, 242, 357, 439, 441, 447, 450, 452--454, & 456 (1971) and 2: 622 & 862. 1971;

Lewalle, Bull. Jard. Bot. Nat. Belg. 42 [Trav. Univ. Off. Bujumb. Fac. Sci. C.20]: 60, 61, & [230]. 1972; Mold., Phytol. Mem. 2: 213, 216--218, 222, 232, 348, & 533. 1980; Mold., Phytologia 57: 346. 1985.

A tree, treelet, or shrub, sometimes a climbing woody or subwoody subshrub, 0.6--3 m. tall, ornamental, shade-loving, sometimes unbranched, the leaves and flowers developing at different times; stems fistular, often myrmecophilous, armed with decussate-opposite spines; bark thin, gray or olivaceous to slightly brownish, smooth and satiny; branches (when present) pubescent; leaves decussate-opposite, ternate, or quadrate, often extremely large; petioles 8--30 cm. long or sometimes shorter, basally articulate, the basal stumps 2--4 per node; leaf-blades oval or ovate to suborbicular, thin-textured to subcoriaceous or even coriaceous, 15--48 cm. long, 10--45 cm. wide, apically acute or acuminate and mucronate, marginally more or less plainly and coarsely undulate or repand to crenulate, subdentate, or entire, sometimes strongly toothed, basally rounded to subcordate or cordate, thinly pubescent on both surfaces or scabrous above and pubescent beneath; inflorescence a short, compact, spike-like, corymbiform or subumbellate panicle, terminal, 10--12 cm. long, composed of dense sessile or subsessile cymes, the cymes capitate or conic, bracteose; pedicels rather elongate or short, 10--14 mm. long; bracts subtending the flowers, lanceolate, 1.2--1.8 cm. long, 2--3 mm. wide, violet or red-violet to Bordeaux wine-color or purple, apically acuminate, pubescent; flowers zygomorphic, very numerous, slightly malodorous; calyx subcampanulate or campanulate, 2--2.5 cm. long, 5-parted almost to the base, reddish or red-violet to dark-purple, externally pubescent, its tube infundibular, very short, brownish-green, externally glandular-hispid, the lobes lanceolate or ovate, large and foliaceous, about twice as long as the tube, 4--5 mm. wide, apically acute or very long-acuminate, externally puberulent and reddish; corolla yellowish or pale yellowish-white to cream, greenish-cream, or white, long-tubular, the tube slender, incurved, 10--20 cm. long, apically inflated, externally sparsely or densely glandular-pubescent, internally pilosulous at the base with red-brownish or violet hairs, the 5 lobes unequal or subequal, obovate, 1--2 cm. long, cream-color or creamy-white, imbricate in bud, reflexed in age; stamens yellowish, twice as long as the corolla-lobes, usually 3--4 cm. long; style very long-exserted; fruiting-calyx red-violet; fruit black with a bronze sheen, edible.

This species is based on *Mechow 121* from Pungo Andongo province, Angola, collected in 1870, deposited in the Berlin herbarium, the type having been designated by Thomas (1936) since *Soyaux 230* was also cited by Gürke. The species is either extremely variable or, more probably, comprises several subspecific taxa corresponding to at least some of the synonymous names listed in the species' synonymy (above) -- of these *C. poggei* is based on *Pogge 1116* from a Kalebue village in the Lualaba district of Zaire, collected in March of 1882; *C. orbiculare* is based on *Welwitsch 5688* from Angola, no locality specified, deposited at the British Museum; *C. hysteranthum* is based on *Welwitsch s.n.* from Pungo Andongo, Angola, deposited at the British Museum; *C. megasepalum* is based on *Welwitsch 5705* also from Pungo Andongo, Angola and deposited at the British Museum;

and C. *capitatum* var. *butayeri* is based on *Butayer s.n.* [Gillet 2245] from Zaire, deposited in the Brussels herbarium.

Clerodendrum angolense is a member of the Section *Macrocalyx* Subsection *Spicata*. Pynaert refers to the flowers as "remarkable", probably because of their length, but there are numerous other species in the genus with equally long corollas. Collectors have found it growing in sclerophyllous and mixed forests and in both primary and secondary forests, at 470--1400 m. altitude, in flower from September to April, as well as in July.

Germain comments: "Relevé sociologique forêt hétèrogène de terre ferme; emplacement essai de dégredation de sols (culture) et régénération de ceux-ci par la jachere forestière; arbuste hemi-sciàphile à tige creuse et épineuse, atteignant 2.5 m de haut; enormes feuilles a limbe cordiformade 32 cm de long sur 35 cm de large, le pétiole mesurant jusque 30 cm de long; epi terminal dense; calice accrescent rouge violacé; fruits presque mûrs d'un noir à reflets bronzés."

The corollas are described as having been "white" on *LeTestu 2054* and *Louis 2119*, "whitish" on *Laurent 663*, "cream" on *Louis 545*, and "pale yellowish-white" on *Seret 698*.

DeWildeman (1922) cites *Bequaert 2288* & *6848* from Zaire. His 1913 work is sometimes cited as "1912", the incorrect volume titlepage date.

Gürke (1893) cites *Pogge 1116* and *Stuhlmann 2702* & *2710* for his C. *poggei*, of which, as stated above, the first-mentioned should be regarded as the type. He says in his specific description: "cymis subsessilibus.....pedunculo longioribus" - diametrically opposed characters! Probably it is the elongate pedicels to which he is referring as "peduncles".

Pellegrin (1928) cites only *LeTestu 2054*; Lewalle (1972) cites *Lewalle 3725* from Burundi. Thomas (1936) cites *Mechow 121* from Angola, *Pogge 1116* and *Stuhlmann 2702* & *2710* from Zaire, and *Ledermann 2112* & *5610* and *Mildbraed 3966* from the Cameroons. DeWildeman (1912) cites *Claessens 649* from Zaire.

In regard to *LeTestu 2054* Pellegrin (1928) says: "Les exemplaires de LeTestu correspondent à la diagnose, sauf par les feuilles ici à nettement grossièrement ondulées et non, comme dit Gürke, 'margine integris'," The collection is from the Republic of Congo (Brazzaville).

Vernacular names reported for the species are "bambake", "bougougo'a ukoi", "gwendja", "gwenza", "ifonge", "ifonghé", "kassakua", "kolotilo", "ligogo", "mbambake", "m'bambake", "mambole", "mvambake", and "queue de leopard". It is reported that native children make whistles out of the hollow stems.

It should be pointed out that, while Baker (1900) cites *Welwitsch 5705* as the type of his C. *megasepalum*, a photograph in the Missouri Botanical Garden's Type Photographs series regards *Welwitsch 5702* as the type.

The C. *speciosum* accredited to Dombrain, D'Ombrain, Hort., Lemaire, Lamarck, and Teijsmann & Binnendijk, in the synonymy (above) are all actually synonyms of C. *thomsonae* f. *speciosum* (Teijsm. & Binn.) Voss.

Citations: GABONESE REPUBLIC: *LeTestu 2054* (B). ZAIRE: *Bequaert 1097* (Br), *2288* (Br), *6848* (Br); *Bredo 627* (Br); *Butayer 2245* (Br,

Ld--photo, N--photo); *Callens 4531* (Cb, Ld); *Claessens 649* (Br); *Collector undetermined 166* (Br), *186* (Br), *774* (Br); *DeGiorgi 132* (Br), *1424* (Br); *Devulf 98* (Br); *Flamigni 141a* (Br); *Germain 103* (Br, Br, N); *Hulstaert 132* (Br), *1147* (Br); *Huyghe s.n.* [Mai 1907] (Br); *M. Laurent 663* (Br), *882* (Br), *1911* (Br), *s.n.* [Eala, 21-5-05] (Br); *Laurent & Laurent s.n.* [3/11/03] (Br), *s.n.* [1903-1904] (Br); *Lebrun 1311* (Br), *3315* (Br), *5169* (Br); *Leemans 197* (Br, Br, Br, N); *Louis 293*(Br), *545* (Br), *819* (Br), *2119* (Br), *2805* (B, Br. Ld--photo, N--photo), *6394* (Br, N, W--2090997), *6882* (Br), *8757* (Br, S), *13238* (Br), *13637* (Br, Ca--962286); *Mortehan 304* (Br), *918* (Br); *Mullenders 2310* (Br, Ld--photo, N--photo); *Putnam 177* (Br, Br); *Pynaert 521* (Br), *s.n.* [1906] (Br); *W. Robyns 958* (Br, Br), *1101* (Br, Br); *Sapin s.n.* (Br); *Seret 698* (Br), *s.n.* [1906] (Br), *s.n.* [1909] (Br); *Vanderyst C.30* (Br); *Vermoesen 238* (Br), *1694* (Br), *1783* (Br, N, W--1094820). BURUNDI: *Lewalle 3725* (Ac, Gz). ANGOLA: *Ang. Veg. 118* (Ul); *Gossweiler 4813* (Br, N); *Mechow 121* (S--isotype, S--isotype); *Soyaux 230* (L); *Welwitsch 5702* [Mo. Bot. Gard. Type Photo 2984] (E--photo, Gz--photo, N--photo). CULTIVATED: Belgium: *Herb. Jard. Bot. Brux. s.n.* [Laeken, 1910] (Br). Zaire: *Corbisier 134* (Br); *Corbisier-Baland 1686* (Br, Br).

CLERODENDRUM ANGUSTIFOLIUM (Poir.) Spreng. in L., Syst. Veg., ed. 16, 2: 758 [as "*Clerodendron*"]. 1825; Sweet, Hort. Brit., ed. 1, 1: 322. 1826 [not *C. angustifolium* Salisb., 1796, nor (Willd.) Hassk., 1844].

Synonymy: *Volkameria angustifolia* Poir. in Lam., Encycl. Méth. Bot. 8: 688. 1808 [not *V. angustifolia* Andr., 1808]. *Volkameria caule subinermi; foliis angusto-lanceolatis, glaberrimis; racemis trichotomis* Lam. ex Poir. in Lam., Encycl. Méth. Bot. 8: 688 in syn. 1808. *Clerodendron angustifolium* Spreng. in L., Syst. Veg., ed. 16, 2: 758. 1825. *Volkamera angustifolia* Lam. ex Spreng. in L., Syst. Veg., ed. 16, 2: 758 in syn. 1825. *Clerodendrum angustifolium* Spreng. ex Steud., Nom. Bot. Phan., ed. 2, 1: 382. 1840. *Clerodendron angustifolium* Spreng apud D. Dietr., Syn. Pl. 3: 615. 1843. *Clerodendron angustifolium* Lam. ex Bocq., Rev. Verbenac. 14. 1862.

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& 108. 1921; Mold., Prelim. Alph. List Inv. Names 18 & 53. 1940; Mold., Alph. List Inv. Names 16 & 56. 1942; Mold., Known Geogr.Distrib. Verbenac., ed. 1, 71 & 89. 1942; Mold., Alph. List Cit. 2: 419 & 565. 1946; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 158 & 180. 1949; Mold., Résumé 55, 215, 260, 391, & 448. 1949; Mold., Résumé Suppl. 14: 10. 1966; Mold., Fifth Summ. 1: 100, 357, 439, & 460 (1971) and 2: 732 & 862. 1971; A. L. Mold., Phytologia 23: 318. 1972; Mold., Phytol. Mem. 2: 93, 348, 461, & 533. 1980.

Illustrations: Lam., Tabl. Encycl. Meth. Bot. [Illust. Gen.] 3: pl. 544 [inf.], fig. 2. 1819.

A shrub or small tree; branchlets decussate-opposite, rather slender, obtusely tetragonal, ashy-gray, minutely puberulent or eventually glabrescent; twigs slender, abbreviated, gray, densely puberulent, more or less striate, with very short internodes (1--6 mm. long); leaf-scars comparatively large, corky, and prominent; leaves numerous on the twigs, decussate-opposite; petioles very slender, 2--9 mm. long, minutely puberulent, canaliculate above; leaf-blades membranous, uniformly dark-green on both surfaces, narrow-lanceolate or elliptic, 2--4 cm. long, 5--14 mm. wide, apically acute or (usually) acuminate, marginally entire, basally acute or acuminate, glabrous or very minutely pulverulent-puberulent on both surfaces, dull; midrib very slender, more or less obscure above, very slightly prominulent or obscure beneath; secondaries 4--7 per side, obscure; vein and veinlet reticulation not discernible; inflorescence axillary at the apex of the twigs, usually subequaling the subtending leaves, trichotomous, 1--6-flowered, solitary, opposite, minutely puberulent throughout; peduncles very slender, to 9 mm. long; branches of the inflorescence slender, mostly shorter than the pedicels; pedicels very slender, about 5 mm. long; bractlets and prophylla linear-setaceous, about 1 mm. long, borne at the apex of the peduncle, base of the inflorescence-branches, and below the calyx; flowers inodorous; calyx short-campanulate, externally glabrous, the rim 5-dentate, the teeth apically acute; corolla infundibular, the tube somewhat curvate, apically slightly enlarged, the limb 5-lobed, the lobes somewhat unequal, apically rounded, eventually slightly reflexed; stamens exserted; anthers narrow, oval; style as long as the filaments; stigma bifid.

This species was originally described from Jamaica and as "completely glabrous" throughout. Schauer (1847) regarded it as conspecific with *C. heterophyllum* (Poir.) R. Br. from Madagascar, Réunion, the Mascarene Islands, and India, but if it is actually native to Jamaica, its conspecificity with *C. heterophyllum* is not very probable. Sweet (1826) asserts that it was introduced into English gardens in 1823 from "Jamaica", but Loudon (1830) claims that it was introduced, instead, in 1824 from Mauritius. Interestingly, Sweet cites the Lamarck (1819) reference to vol. "3", while Loudon cites it to volume "2".

Poiret (1808) comments in his original description: "Cette plante a des rapports avec le *Volkameria heterophylla*, mais ses feuilles sont toutes de même forme, à nervures simple, fines, latérales. Ses branches se divisent en rameaux glabres, opposés, garnis de feuilles pétiolées, très-étroites, lanceolées, glabres à leurs deux faces; la

plupart aiguës à leurs deux extrémités, entières, longues de deux pouces & plus, larges de trois lignes; les pétioles courts; le point de leur insertion à peine saillant. Les fleurs sont axillaires, latérales, opposées, trichotomés, à l'extrémité d'un pédoncule commun, accompagnées, à la base des ramifications & un peu au deffous du calice, de deux petites bractées opposées, en forme d'écailles. Le calice est glabre, court, campanulé, à cinq dents aiguës; la corolle infundibuliforme; le tube légèrement courbé, insensiblement élargi vers son sommet; le limbe divisé en cinq lobes, arrondis, un peu inégaux, un peu réfléchis en dehors; les étamines saillantes; les anthères droites, ovales; le style de la longueur des filamens; le stigmate bifide. Cette plante croît dans les contrées méridionales de l'Amérique, à la Jamaïque. On la cultive au Jardin des Plantes de Paris."

He includes Browne's "*Clerodendrum fruticosum, spinosum, foliis inferioribus confertis, superioribus oppositis; pedunculis tripartitis, trifloris, alaribus*" as a synonym, but this is most generally regarded as a synonym of *Clerodendrum aculeatum* (L.) Schlecht.

Common name reported for *C. angustifolium* are only "narrow-leaved clerodendrum" and "volkameria à feuilles étroites".

Citations: CULTIVATED: Germany: *Hort. Metzler s.n.* [Offenbach 1826] (E--118935, Ld--photo, N, N--photo).

CLERODENDRUM ANOMALUM Letouzey, Adansonia, ser. 2, 14: [219]--226, fig. 1--3. 1974.

Bibliography: Letouzey, Adansonia, ser. 2, 14: [219]--226, fig. 1--3. 1974; Mold., Phytologia 31: 388. 1975; Mold., Phytol. Mem. 2: 213, 216, & 533. 1980; Brenan, Ind. Kew. Suppl. 16: 71. 1981.

A scandent shrub or woody liana; branches slightly tetragonal; young branchlets grayish-puberulent, sparsely lenticellate; principal internodes 10--15 cm. long; petioles 1--3 cm. long, puberulent, on abscission leaving short, opposite, spinescent protuberances on the branches; leaf-blades ovate, 12--15 cm. long, 6--8 cm. wide, apically long-acuminate, marginally slightly undulate, basally rounded and centrally broadly cuneate, decurrent into the petiole, glandular-pubescent and cinerescent beneath, the pubescence more or less deciduous; secondaries about 5 per side, anastomosing in loops a few mm. from the margins; tertiaries more or less parallel and perpendicular to the midrib and secondaries; inflorescence axillary, pseudoracemiform, 5--25 cm. long, composed of 5--8 opposite fascicles, each fascicle with 1--5-flowers, the larger pseudo-racemes basally branched with secondary rachids to 10 cm. long; bracts foliaceous, spatulate, about 5 mm. long and 2 mm. wide, puberulent; pedicels 2--4 mm. long, puberulent; peduncles 2--10 cm. long; rachis puberulent; flowers zygomorphic, 8 mm. long; calyx green, broadly campanulate, 4 mm. wide, marked on both surfaces with discoid glands, somewhat accrescent, the tube 2 mm. long, the limb 5-lobed, the lobes rounded, 1 mm. long, at first erect, later curved; corolla greenish, the lower lobe whitish, the tube short, 4 mm. long, curvate, apically conspicuously inflated, 2--3 mm. wide, the limb 5-lobed, the lobes 3 mm. long, imbricate in bud, the lower one internal, distinctly concave,

finally conspicuously patulous, 4 mm. long, the lateral and upper ones marginally ciliate, externally with discoid glands; stamens 4, the alternate ones slightly dissimilar; filaments attached to the middle of the corolla-tube, included, pilose; anthers ovate-lanceolate, papillose, dorsifixed, the thecae parallel and exserted; style 8 mm. long, curvate, slightly exserted; stigma bifid, the branches clavate, similar, the lower slightly shorter than the upper; fruit drupaceous, at first rose-color, finally brown, globose, 6--9 mm. long and wide, esulcate when fresh, the epicarp thin, marked with circular sunken glands, the mesocarp rather thickened; pyrenes 4 or by abortion only 1--3, incompletely free, with an apical open cavity, obovoid, 5 mm. long, 3 mm. wide, externally with 5 more or less developed longitudinal crests; seed 1, laterally attached in the closed posterior cavity; testa membranaceous, expanded into a peripheral wing.

This species is based on *Leeuwenberg 9540* from the forest of Bakaka at km. 3 on the road from Eboné to Ekomtolo, the former locality being at km. 11 on the road from Nkongsamba to Loum, in the Cameroons, collected on March 30, 1972 and deposited in the Herbarium Vadense at Wageningen. The type material exhibits both flowers and fruit, the latter preserved in alcohol at Wageningen. Letouzey cites also *Letouzey 11085* and *LeTestu 6096, 7594 & 8162*, the first from Cameroons and the 3 latter from Gabon. The plant has also been collected in flower in January, July, September, and November, and in young fruit in January. Letouzey provides a supplementary and very lengthy description of details of the branches, leaves, inflorescences, stamens, and fruit.

The species inhabits degraded forests and the borders of thickets along roadsides, blooming in the dry season in Cameroons, but in the rainy season in Gabon. Preliminary study by Letouzey of the Le Testu collections in 1926, 1929, and 1930 from Gabon persuaded him that a new genus (which he planned to call *Moldenkea*) was indicated, but more material later convinced him that the taxon represented, instead, an anomalous species of *Clerodendrum*, Subgenus *Cyclonema*.

Citations: MOUNTED ILLUSTRATIONS: Letouzey Adansonia, ser. 2, 14: 220, fig. 1. 1974 (Ld), 222, fig. 3. 1974 (Ld), 223, fig. 2. 1974 (Ld).

CLERODENDRUM ARENARIUM J. G. Baker in Trimen, Hourn. Bot. Brit. 20: 243 [as "*Clerodendron*"]. 1882; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 53 & 89. 1942.

Synonymy: *Clerodendron arenarium* J. G. Baker in Trimen, Journ. Bot. Brit. 20: 243. 1882.

Bibliography: J. G. Baker in Trimen, Journ. Bot. Brit. 20: 243. 1882; Vatke, Abhandl. Naturwiss. Ver. Bremen 4: 134. 1885; A. W. Hill, Ind. Kew. Suppl. 9: 68. 1938; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 53 & 89. 1942; Mold., Alph. List Cit. 1: 48 (1946), 2: 537 (1948), and 3: 725. 1949; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 123 & 180. 1949; Mold. in Humbert, Fl. Madag. 174: 149, 152, 211, 214--216, & 266--267, fig. 34 (6 & 7). 1956; Mold., Résumé 155 & 448. 1959; Mold., Fifth Summ. 1: 259 (1971) and 2: 862. 1971; Mold., Phytol. Mem. 2: 248 & 533. 1980; Raj, Rev. Palaeobot.

Palyn. 39: 358 & 374. 1983.

Illustrations: Mold. in Humbert, Fl. Madag. 174: 211, fig. 34 (6). 1956.

A shrub, 1--4 m. tall; branches and branchlets rather slender, brownish, very obscurely tetragonal or flattened, rarely 3-angled and 3-sulcate, conspicuously lenticellate, minutely puberulent, glabrescent in age; twigs more densely puberulent; lenticels elongate-elliptic, longitudinal, corky, often crowded and conspicuous; leaf-scars rather large and elevated, corky-margined; leaves decussate-opposite or rarely ternate, abundant, with reddish venation when fresh; nodes not annulate; principal internodes 0.5--6 cm. long, often much abbreviated on floriferous twigs; petioles slender or stoutish, 2--10 mm. long, often subobsolete, minutely puberulent; leaf-blades membranous, dark-green above and brunnescent in drying, somewhat lighter beneath, narrowly elliptic or rarely lanceolate, 2.5--14 cm. (mostly 5--7 cm.) long, 1--2.8 cm. wide, apically blunt or acute, marginally mostly entire or rarely crenate-serrate to dentate with antrorse rounded teeth (especially on the largest leaves), basally acute, very minutely and obscurely puberulent on both surfaces or glabrescent, more or less punctate beneath; midrib slender, flat above, prominent beneath; secondaries very slender, 4--7 per side, arcuate-ascending, often issuing at approximately right angles and then abruptly arcuately joined, mostly obscure or indiscernible above, prominulous beneath; vein and veinlet reticulation sparse, indiscernible above, only the largest parts subprominulous beneath; inflorescence axillary, abundant, the cymes usually 3-flowered; peduncles slender, flattened, 2--3 cm. long, minutely puberulent; pedicels very slender or filiform, 6--12 mm. long, minutely puberulent; flower-buds usually vivid-red; calyx varying from reddish to green with the venation and margins violet or else green on the lower half and dark wine-red on the upper half, herbaceous, thin-textured, campanulate, often brunnescent or nigrescent in drying, 1.4--2 cm. long, often plainly costate when mature with a rib leading to the apex of each lobe and one to each sinus, glabrous or subglabrous, its rim deeply 5-lobed, the lobes triangular-ovate, 3--6 mm. long, 4--5 mm. wide, apically acute or subacute; corolla succulent, varying from vivid-red or wine-red to rose or pale-rose or even rose-lilac, red-violet, or violet, sometimes white with a violet throat or pale wine-red tube, the tube infundibular, 2--2.5 cm. long, gradually ampliate from the base, minutely puberulent on the outside, 2.5--3 mm. wide above the calyx, about 1.5 cm. wide at the apex, the 5 lobes obovate, 1--1.5 cm. long, apically subacute or rounded, very minutely puberulent on the outside, glabrous within, venose; stamens and pistil exserted from the corolla-tube, usually included by the limb, the stamens borne at 3 levels, well separated by 2 yellow lines; filaments and style wine-red; fruiting-calyx membranous, about 2.3 cm. long, glabrous, shiny, conspicuously 10-costate and venose, apparently not splitting, its rim conspicuously 5-lobed, the lobes triangular-ovate, 6--7 mm. long, 5--6 mm. wide, erect, apically attenuate-acute; fruit drupaceous, subglobose, about 1 cm. long and wide, nigrescent, 4-lobed.

This endemic species of Madagascar is based on unnumbered Bojer

and Meller collections, the former from Moremanga and the latter from Ambatomanga, both localities in central Madagascar, the Meller collection made on August 5, 1862.

Collectors have encountered this plant in forests and remnant forests, as well as at their edges, in thickets and sandy clearings, on sand and grit soil, on gneiss and gneiss-laterite, at altitudes of 560--2000 m., in flower in January and from September to November. Moldenke (1956) describes the habitat as "Forêt oriental et à sous-bois herbacé, lisières, clairières, terrain découvert, broussailles, rocailles, savoka à *Philippia*, sur latérite de gneiss, sable, grès, etc..., à basse et moyenne alt.", recording the time of "fl. et fr." also as February and perhaps May.

The corollas are described as having been "carmine" on *Schlieben 8087*, "rose" on *Decary 5245* & *5462*, *Humbert 18040*, *Perrier 14960*, and *Viguier & Humbert 810*, "pale-rose" on *Decary 18396*, "rose-lilac" on *Hildebrandt 3607*, "red-violet" on *Perrier 18012*, "wine-red" on *Cours 110*, "vivid-red" on *Humbert 3289*, "white with a pale-red tube" on *Viguier & Humbert 590*, and "white with a violet throat" on *Perrier 10190*. It is probable that the white-flowered form may be worthy of separation as a color form.

Decary 18396 is said to have had the leaf venation reddish; *Perrier 18012* is somewhat anomalous in having its leaves ternate, some distinctly lanceolate and to 14 cm. long and 2.8 cm. wide, marginally dentate with subcrenate, antrorse, rounded teeth.

Material of this species has been misidentified and distributed in some herbaria as *Bignoniaceae*.

Citations: MADAGASCAR: *Afzelius s.n.* [16.10.1912] (K, N, S, S); *d'Alleizette 1275* (P); *Baron 2489* (P), *2609* (K), *2787* (K), *2819* (K), *2978* (P), *3108* (P), *3576* (P), *3604* (P), *5471* (K, P), *5719* (P), *6968* (K), *6980* (K); *Bojer s.n.* [Moremanga] (P--cotype); *Chapolier s.n.* (P); *Cours 110* (P); *Decary 5462* (N, P), *10125* (S), *18396* (P), *18399* (P), *18508* (P); *Garnier 125* (P); *Herb. Mus. Paris s.n.* [November 1888] (P); *Hildebrandt 3607* (Ca--616062, K, L, Mu--1823, P); *Humbert 1240* (P), *3289* (B, P, W--2494690), *18040* (P); *Humblot 591* (P, P); *Lam. & Meeuse 5370* (Le--939151-120, N); *Meller s.n.* [August 5, 1862] (F--photo of cotype, K--cotype, Ld--photo of cotype, N--photo of cotype); *Perrier 10190* (N, P), *10268* (P), *14960* (P), *19012* (P); *Schlieben 8087* (Ca--1169885, Mu); *Viguier & Humbert 590* (P), *810*(P).

CLERODENDRUM ARENARIUM var. *MACROCALYX* Mold., Bull. Torrey Bot. Club 77: 393. 1950.

Bibliography: Mold., Bull. Torrey Bot. Club 77: 393. 1950; Mold. in Humbert, Fl. Madag. 174: 152, 211, 216, & 267, fig. 34 (7). 1956; Mold., Résumé 155 & 448. 1959; Mold., Fifth Summ. 1: 259 (1971) and 2: 862. 1971; Mold., Phytol. Mem. 2: 248 & 533. 1980.

Illustrations: Mold. in Humbert, Fl. Madag. 174: 211, fig. 34 (7). 1956.

This variety differs from the typical form of the species in having the calyx at the time of anthesis 2.5--3 cm. long. The corolla is described as violet in color on the unnumbered Paris herbarium specimen.

The variety is based on *Humbert & Cours 17626* from a shady forest

at an altitude of 800--1000 m, in the Massif de l'Andrangovalo, to the southeast of Lake Alaotra in the Reserve Naturelle No. 3 (Zakamena), in the basin of the Onibe river, Madagascar, collected at the end of October 1937, and deposited in the Paris herbarium. A vernacular name for the plant is "atamba".

Citations: MADAGASCAR: *Herb. Mus. Paris s.n.* [Nov. 1888] (P); *Humbert & Cours 17626* (F--photo of type, Ld--photo of type, N--fragment & photo of type, P--type).

CLERODENDRUM AUCUBIFOLIUM Hemsl., Kew Bull. Misc. Inf. 1894: 102 [as "*Clerodendron*"]. 1894; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 53 & 89. 1942.

Synonymy: *Clerodendron aucubifolium* Hemsl., Kew Bull. Misc. Inf. 1894: 102. 1894.

Bibliography: Hemsl., Kew Bull. Misc. Inf. 1894: 102. 1894; Durand & Jacks., Ind. Kew. Suppl. 1, imp. 1, 101 (1901) and imp. 2, 101. 1941; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 53 & 89 (1942) and ed. 2, 123 & 180. 1949; Mold. in Humbert, Fl. Madag. 174: 148, 151, 168--171, 266, & 267, fig. 26 (1--4). 1956; Durand & Jacks., Ind. Kew. Suppl. 1, imp. 3, 101. 1959; Mold., Résumé 155, 392, & 448. 1959; Mold., Fifth Summ. 1: 259 (1971) and 2: 733 & 862. 1971; Mold., Phytol. Mem. 2: 248 & 534. 1980.

Illustrations: Mold. in Humbert, Fl. Madag. 174: 171, fig. 26 (1). 1956.

A shrub or tree, 2--3 m. tall; branchlets medium-thick, gray, rather obscurely and obtusely tetragonal, glabrous, shiny; twigs brunnescent, shiny, glabrous or slightly pilosulous at the apex; nodes not annulate; principal internodes 0.5--5 cm. long; leaf-scars very large and prominent, flat, corky-margined; leaves decussate-opposite; petioles stout, about 1 cm. long, flattened or subcanaliculate above, glabrate; leaf-blades thin-chartaceous, rather uniformly light- or grayish-green on both surfaces, shiny, elliptic or subobovate, 9.5--16 cm. long, 4--8 cm. wide, apically short-acuminate, marginally entire, basally short-acuminate, glabrous on both surfaces; midrib rather stout, flat above, prominent beneath; secondaries slender, 5 or 6 per side, arcuate-ascending, elongate, flat or slightly subprominulous above, prominulous beneath, joined in many loops near the margins beneath; vein and veinlet reticulation rather abundant, fine, the larger parts often subprominulous above, prominulous beneath; inflorescence terminal, consisting of several pairs of opposite 1--3-flowered cymes, nigrescent throughout in drying, sessile, but the individual cymules long-stipitate in pseudo-pedunculate fashion, each pair of cymules subtended by a pair of rather large bracts; cymule-stalks 3--7.5 cm. long, flattened, ascending, stout, glabrous; pedicels stout, 1.3--2.5 cm. long, glabrous; bracts at the base of the cymule-stalks lanceolate, navicular, about 5 mm. long and 2.5 mm. wide, densely appressed-pubescent; bractlets situated at the base of the pedicels filiform, 2--3 mm. long, glabrous or very sparsely pilosulous; flowers fragrant; calyx coriaceous or subcoriaceous, nigrescent, not venose, 1.8--2.3 cm. long, tubular, 7--8 mm. wide, glabrate, its rim deeply 5-toothed, the teeth lanceolate-ovate, 3--5 mm. long, apically attenuate-acute,

erect; corolla-tube pink, very narrow-cylindric except at the infundibular apex, about 5.5 cm. long, about 1.5 mm. wide above the calyx, ampliate to 12 mm. at the apex, externally glabrous, the limb 5-lobed, the lobes white, oblong-lanceolate, 1.3--1.5 cm. long, 5--6 mm. wide, apically obtuse; stamens and pistil crimson, long-exserted, projecting about 4 cm.from the mouth of the corolla-tube.

This endemic species is based on *Baron 6151* and *6408* from Iharana in northeastern Madagascar, collected in or before January 1892. Moldenke (1956) notes that "L'Iharana s'étendait au Nord jusqu'à l'embouchure de la Loky, c'est-à-dire dans le secteur Nord du domaine de l'Ouest....C'est peut-être à cette espèce que se rapporte ce que dit Baron dans la Revue de Madagascar (1906), p. 363: 'Un suc en était, dit-on, quelquefois extrait. La racine de cet arbuste était, autrefois, emportée par le père d'un nouveau-né (si c'était le premier-né), maintenue au-dessus de la tête de l'enfant, en dehors de la maison, et ensuite, jetée à terre dans la direction de l'Ouest. On croyait que l'enfant pouvait, d'une façon ou d'une autre, recueillir quelque avantage de cette cérémonie.'"

The original cotypes of *C. aucubifolium* are deposited in the Kew herbarium and the species is known only from low areas in the eastern forest areas, flowering from June to August. Fosberg refers to it as rare at the foot of steep mostly bare granite slopes at 30--100 m. altitude; he found it in flower in October.

Citations: MADAGASCAR: *Baron 6151* (K--cotype), *6408* (F--photo of cotype, K--cotype, Ld--photo of cotype, N--fragment & photo of cotype, P--cotype); *F. R. Fosberg 52589* (W--2922724).

CLERODENDRUM AUCUBIFOLIUM var. *GIGANTEUM* Mold., Bull. Torrey Bot. Club 77: 393. 1950.

Bibliography: Mold., Bull. Torrey Bot. Club 77: 393. 1950; Mold. in Humbert, Fl. Madag. 174: 148, 170, & 171, fig. 26 (2). 1956; Mold., Resume 155 & 448. 1959; Mold., Fifth Summ. 1: 259 (1971) and 2: 862. 1971; Mold., Phytol. Mem. 2: 248 & 534. 1980.

Illustrations: Mold. in Humbert, Fl. Madag. 174: 171, fig. 26 (2). 1956.

This variety differs from the typical form of the species in having its calyx at the time of anthesis 4.5--5 cm. long, flaring to 2.5 cm. wide at its apex, and the corolla-tube to 18 cm. long, very slender except at the infundibular apex, the lobes about 2 cm. long. The fruiting-calyx is deeply lobed, the lobes ovate, about 2 cm. long, erect, attenuate-acute at the apex. The fruit is fleshy, soon splitting the fruiting-calyx, nigrescent.

The variety is endemic to Madagascar and is based on *Perrier 10229* from woods on syenite, at 200 m. altitude, in the Massif de Mononga-riva, Sambirano, Madagascar, collected in 1909, deposited in the Paris herbarium.

Citations: MADAGASCAR: *Forsyth Major 106* (K); *Lastelle s.n.* [1841] (P); *Perrier 10229* (F--photo of type, Ld--photo of type, N--fragment & photo of type, P--type).

CLERODENDRUM AUCUBIFOLIUM var. *LONGIFLORUM* Mold., Bull. Torrey Bot. Club 77: 393. 1950.

Synonymy: *Volkameria longiflora* Petit-Thouars ex Mold., Bull. Torrey Bot. Club 77: 393 in syn. 1950.

Bibliography: Mold., Bull. Torrey Bot. Club 77: 393. 1950; Mold. in Humbert, Fl. Madag. 174: 148, 170, 171, & 267, fig. 26 (3 & 4). 1956; Mold., Résumé 155, 392, & 448. 1959; Mold., Fifth Summ. 1: 259 (1971) and 2: 733 & 862. 1971; Mold., Phytol. Mem. 2: 248 & 534. 1980.

Illustrations: Mold. in Humbert, Fl. Madag. 174: 171, fig. 26 (3 & 4). 1956.

This variety differs from the typical form of the species in having its very stout petioles 1.5--3 cm. long, its leaf-blades firmly coriaceous, elliptic or broadly elliptic, to 26 cm. long and 7--12 cm. wide, the calyx at the time of anthesis 3.4--3.8 cm. long, not flaring, apically about 1 cm. wide, and the corolla-tube very slender except at the infundibular apex, 11--13 cm. long, the lobes 3--3.5 cm. long.

The corolla, according to Perrier, is white, suffused with violet.

The variety is based on *Petit-Thouars s.n.* from somewhere in Madagascar, deposited in the Paris herbarium. It has been encountered at about 100 m. altitude, in flower in September.

Citations: MADAGASCAR: *Perrier 10107* (P); *Petit-Thouars s.n.* (F--photo of type, Ld--photo of type, N--photo of type, P--type).

CLERODENDRUM AURANTIACUM J. G. Baker in Thiselt.-Dyer, Fl. Trop. Afr. 5: 313 [as "*Clerodendron*"]. 1900; B. Thomas, Engl. Bot. Jahrb. 68:[Gatt. Clerod.] 89 & 92. 1936 [not *Clerodendron aurantiacum* Don, 1936].

Synonymy: *Clerodendron macrostachyum* J. G. Baker, Kew Bull. Misc. Inf. 1898: 159. 1898 [not *C. macrostachyum* Turcz., 1863]. *Clerodendrum aurantiacum* J. G. Baker in Thiselt.-Dyer, Fl. Trop. Afr. 5: 313. 1900. *Clerodendrum macrostachym* Baker apud B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 89 sphalm. in syn. 1936.

Bibliography: J. G. Baker in Thiselt.-Dyer, Kew Bull. Misc. Inf. 1898: 159. 1898; J. G. Baker in Thiselt.-Dyer, Fl. Trop. Afr. 5: 295 & 313. 1900; K. Schum., Justs Bot. Jahresber. 28 (1): 495. 1900; Thiselt.-Dyer, Ind. Kew. Suppl. 2: 43. 1904; B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 17, 48, 89, 92, & 94. 1936; Mold., Alph. List Inv. Names 19. 1942; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 51 & 89 (1942) and ed. 2, 120 & 180. 1949; Mold., Résumé 149, 266, & 448. 1959; Mold., Fifth Summ. 1: 249 & 450 (1971) and 2: 862. 1971; Mold., Phytol. Mem. 2: 238 & 534. 1980.

An erect perennial herb or undershrub; stems erect, stout, glabrous or finely pubescent; leaves decussate-opposite, small, sessile, lanceolate or oblanceolate-oblong, dark-green, the lower ones 7.5--10 cm. long, apically obtuse, marginally crenate on the upper half or incised-crenate at the middle, narrowed gradually from the middle to the cuneate and entire-margined base, pubescent on both surfaces, especially beneath; cymes sessile or the lower ones short-peduncu-late, many-flowered, dense, crowded, forming a long, lax, terminal panicle 15--20 cm. long; bracts foliaceous, linear or lanceolate;

calyx campanulate, 3--4 mm. long, externally pubescent, the lobes orbicular to ovate or oblong, about 4 mm. long or about as long as the tube, apically obtuse, often unequal; corolla golden-yellow or light-orange, the tube very short.

Clerodendrum aurantiacum is based on an unnumbered Meller collection from the Manganja Hills in Malawi and *C. macrostachyum* is based on an unnumbered Whyte collection from 2500--3500 feet altitude on Mount Zomba, also in Malawi. Thomas (1936) cites only these two original collections. Nothing is known to me of the species beyond what is stated in the bibliography.

CLERODENDRUM BAKHUIZENI Mold., Phytologia 4: 43--44. 1952.

Synonymy: *Clerodendrum glaucum* Wall. ex Loud., Hort. Brit., ed. 1, 247 nom. subnud. 1830. *Clerodendron glaucum* Wall. ex Schau. in A. DC., Prodr. 11: 675 nom. nud. 1847.

Bibliography: Loud., Hort. Brit., ed. 1, 247 (1830, ed. 2, 247 (1832), and ed. 3, 247. 1839; Steud., Nom. Bot. Phan., ed. 2, 1: 383. 1840; Schau. in A. DC., Prodr. 11: 675. 1847; Buek, Gen. Spec. Syn. Candoll. 3: 106. 1858; Wigman, Teysmannia 23: 284/285, fig. 6, & 287. 1912; Stapf, Ind. Lond. 2: 238. 1930; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 54 & 90 (1942) and ed. 2, 126 & 181. 1949; Mold., Phytologia 4: 43--44. 1952; Mold., Résumé 161, 215, 263, 272, 448, & 450. 1959; G. Taylor, Ind. Kew. Suppl. 12: 36. 1959; Mold., Fifth Summ. 1: 446 (1971) AND @: 862. 1971; Mold., Phytol. Mem. 2: 348 & 534. 1980.

Illustrations: Wigman, Teysmannia 23: 284/285, fig. 6. 1912.

A shrub or tree; branches and branchlets rather slender, light-gray, obtusely tetragonal, densely short-pubescent with sordid-canescent subappressed hairs, glabrescent in age; twigs very slender, very densely short-pubescent with antrorsely curved sordid hairs; nodes not ampliate, sometimes annulate; principal internodes 0.5--4.5 cm. long; leaf-scars subcircular, borne on large, very divergent and prominent corky sterigmata; leaves ternate; petioles very slender, 1--2 cm. long, densely short-pubescent like the twigs; leaf-blades thin-chartaceous, brittle when dry and rather uniformly gray-green on both surfaces, broadly elliptic or elliptic-ovate, 2.2--6.5 cm. long, 1.5--4.5 cm. wide, apically rounded or obtuse, marginally entire, basally broadly rounded to shortly acuminate, more or less densely puberulent above, more or less densely puberulent or short-pubescent and impressed-punctate beneath; midrib slender, flat above, prominulous beneath; secondaries very slender, 4--6 per side, arcuate-ascending, flat above, subprominulous beneath; veinlet reticulation rather sparse, mostly very obscure or indiscernible above, rather obscure or slightly subprominulous beneath; inflorescence terminal, composed of 2--6 whorls of rather few-flowered cymes mostly about 3 cm. long; peduncles much abbreviated, indistinguishable from the twigs; sympodia abbreviated, mostly 5--10 mm. long, densely appressed-puberulent; cyme-branches slender, 1--2 cm. long, densely appressed-puberulent; pedicels filiform, 1--2 mm. long, densely sordid-puberulent; bractlets narrow-elliptic or linear, 2--4 mm. long, densely brownish-puberulent; calyx narrow-campanulate.

[to be continued]